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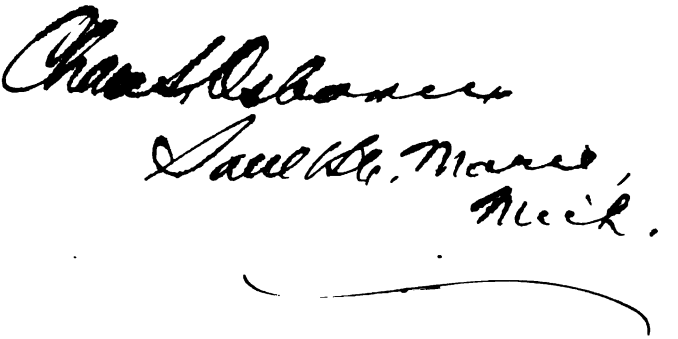

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Frontispiece INDIANS—STRAITS OF MAGELLAN.

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Trade & Travel
in
South America.

BY

FREDERICK ALCOCK, F.R.G.S.

SECOND EDITION.

LONDON:
GEORGE PHILIP & SON, LTD., 32, FLEET STREET, E.C.
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INTRODUCTION TO SECOND EDITION.

Owing to the rapid sale of the first edition of "Trade and Travel in South America," and to the demand for a Second Edition at a popular price, I am glad to say that I have been able to make arrangements which render it possible to meet the public demand.

In re-publishing the Work, I have endeavoured, as far as practicable, to bring the information up-to-date, and where statistics are not given for recent years, these have not, in some cases, been available, whilst in others they approximate so closely to those of later date that an alteration was unnecessary.

The public interest in Trade is growing to such an extent, and the demand for facts which are helpful in securing and augmenting our share of the World's Commerce is increasing both in our Commercial Schools and in the arena of actual contest, that I am hopeful the re-publication of the Work will serve a useful purpose, and may prove a factor in the enlargement of the trade of that Greater Britain to which I am proud to belong.

FREDERICK ALCOCK.

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TRADE AND TRAVEL

IN

SOUTH AMERICA.

CHAPTER I.

OBJECT. HOW TO MEET COMPETITION. SUBSTITUTE FOR UNIVERSAL LANGUAGE. PROPOSED JOURNEY. OUTFIT. COMMERCIAL RELATIONSHIPS BETWEEN GREAT BRITAIN AND SOUTH AMERICA. HOW TRAFFIC IS CONVEYED — SAILER — CARGO STEAMER — MAIL AND PASSENGER STEAMER—CONNECTING LINES—WANT OF GOVERNMENT RECOGNITION. BAGGAGE. MASTER PORTERS, STEVEDORES AND LUMPERS. QUEER STREET. OUTWARD AND HOMEWARD CARGOES. THE BOND OF TRADE.

I REMEMBER, when a school boy, I had a great horror of anything in the shape of a "preface," a feeling generally shared in by my schoolfellows, as often in playfulness, and occasionally with a tinge of derision, we would exercise our ingenuity in framing sentences with the letters of the word, an ingenuity which not infrequently led to trouble in school and at home, and certainly did not enhance the artistic merits of the book. That horror has long since changed into a keen relish for that part of the book where the writer generally gives the reason of its production, and often an insight into his own character, thus adding the charm of friendly intercourse—however restricted—and giving to the work an increased interest and lucidity.

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As I still believe that prefaces are more frequently passed over than read, this book has no preface, but it has a distinct object which will soon be manifest; and as facts, shipping, commercial and geographical, may be regarded by the majority of Britons as dry and uninteresting, I desire to so intermix those contained in this volume with the story of my travels round South America, and some of the stories one hears *en voyage,* that the facts, being food for the mind, may come as an agreeable and delightful solid after a light and pleasant entrée. To ask you to credit all the yarns re-told would be to make too great a demand upon your credulity. Some are true, others you will judge of, and all I trust will be found entertaining, tho' the keen wits of my readers may discover some fossils amongst them.

The one great fact I have had seared into my mind as with a branding iron, in a journey covering 50,000 miles by sea and land, in intimate touch with the trade and commerce of a large and important continent, is, if Britain is to continue to hold her place in the fore-front of commerce—and commerce in a sense rules the world—she must grapple with the difficulties presented by the confusion of tongues and exchanges, and do what the ever aggressive and competitive foreigner is doing, viz. : studying how to make business easy to those with whom he comes into commercial relationship, and having learnt the lesson, puts it into immediate practice. It is our enterprise, courage and wealth as a nation which has won for our country the position she holds, but the systems of conducting trade, successful in the past, are fast becoming obsolete and require

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revision. Other nations are gradually getting up to and passing her in the race for commercial supremacy. In daily practice I find, for example, if I write to a business house in Germany, my answer almost invariably comes in English, and the same system is growing in France, and whilst the English may not in every case be of the denomination known as 'the King's,' it is understandable and shows an indomitable spirit in the overcoming of the language difficulty and a keenness for business which, if we want to surpass, we shall require to amend our methods. It is reputed of us, and the reputation is difficult to eradicate, that our system has been to require other nations to adapt themselves to our methods and modes of doing business instead of following the opposite course and making business easy to others,—troublesome work at the outset, but work almost invariably crowned with a success in the end, more than compensating for the pains of accomplishment. If one could have a universal language—so much talked of a few years ago—business and travel would be simplified somewhat, but with an ultimate and irreparable loss to literature, the realm of thought—thought varying as vary the nations and the climes they inhabit. Still there might be a language like that of the ancient Inca, Quichua, which bound the several races together, or, at all events, if not a language of elegance and fashion, a modified code to facilitate business and travel, if a concert or conference of nations could be arranged, and could be induced to look at the matter from the standpoint of general convenience without any admixture of national pride. It may be

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that some nations, like a certain colony in a remote quarter of the globe suspected of preferring to be without telegraphic communication for the reason that rapacious bargains in the case of vessels in distress can be enforced, would elect to retain the language difficulty, knowing the apathy generally existing, and that difficulty limits the number of competitors.

Should this book have the good fortune to come under the notice of the 'powers that be,' or some future statesman, for who knows what my reader may become, I would venture to suggest as a preliminary step that an effort be made to bring about such a Conference as indicated, and that, once summoned, its first efforts should be directed to the fixing, in any single language selected, of one denomination for :

All articles of food, beverages, dress, and
All staple articles of commerce.

There should also be :

One system of weights and measures, and
One money standard.

There are many difficulties to be surmounted to bring about the change advocated, particularly in regard to the uniform money standard, but difficulties are met with in every phase of life, and when initial difficulties are overcome, the advantages and saving of time resulting, not to speak of the pleasure of success, far outweigh the cost and trouble expended to that end.

In company, I now propose to travel with you to South America, to travel with our eyes wide open and minds in their most receptive condition. It is wonderful what an amount of pleasure and instruction is lost

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to the casual observer,—he generalises too much and misses a thousand and one charms in nature, and, shall I say, points in business, through the neglect of particular examination and enquiry. Life is too short, no doubt, to master the details of everything which may come under our observation, and in this work we can only in many cases touch lightly upon subjects which, if thoroughly dealt with, would each require a separate volume. No one, however, if he wishes and will take the pains, need be without an intelligent grasp of his surroundings, and a masterful knowledge of the special business he may choose to make his own.

As our journey will take some months, and we shall have to pass through the Tropics and later through the cold but beautiful Straits of Magellan, our first care will be to provide a suitable outfit of thick and thin clothing, and our next to select the line of steamers by which we will travel. The first accomplished, we proceed, by the aid of newspaper advertisements and Shipping Guides, and the worrying of friends and acquaintances, to get information in regard to the second. As one of the objects of our journey will be to enquire into the commercial relationships between Great Britain and South America, we are brought by our enquiry face to face with the modes of conveying passengers and cargo between the two countries. These can, for our purpose, be conveniently put into three classes:—

First—The sailing vessel.

Second—The cargo boat with, in some cases, accommodation for 12 passengers; and

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Third—The mail and passenger steamer, also carrying cargo.

SAILING VESSEL.

It is common knowledge that the first kind is rapidly being displaced by the second and third, as steamers are now being built of such large dimensions that they can carry cargo at rates of freight which compete with the sailer in that particular, and altogether eclipse her in speed; so that in the matter of cargo, if we were interested as merchants or shippers, we should hardly select a sailing vessel to convey our goods unless we were not in a hurry to get them to destination; could effect some saving in freight and other charges; and desired, if need be, to make a warehouse of the ship pending disposal of the goods.

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We should also scarcely care to make the voyage in a sailer, as the comforts and conveniences of the steamer so greatly surpass anything of the kind on her predecessor. If we meant to follow the sea as a profession, we should naturally, select a sailer, and remain in that branch until we had passed for our master's certificate, after which our aim would be to obtain an appointment in a steamer, where the pay and the life are better.

It should be noticed in this connection that in the first-class lines of steamers only officers holding masters' certificates are appointed.

Should the sailing vessel disappear altogether, it will be a pity, if only on the ground that our best navigators have been recruited from that service.

CARGO BOAT.

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The purely cargo boat class may be subdivided into those boats which perform a more or less regular service on a published itinerary or time table, and those which sail here, there and everywhere, and rejoice in the euphonious name of 'Tramp.' This latter type has of late years become very numerous, and consists chiefly of low-powered boats of large carrying capacity, and as they are continually causing fluctuations in the freight market, they are not looked upon by the owners of regular lines of steamers with much more urbanity than falls to the share of the veteran of the road whose name they bear.

Our business, however, as shippers, being as yet shall we say small, is not with the tramp steamer so much as with the liners, by which we can send forward or receive in small or large consignments the commodities in which we have determined to deal. It would not pay us to hire or charter a 'tramp' unless we could be certain of filling her at less cost than we could ship otherwise from any port served by a regular liner, nor would it, except on occasion, suit us to ship by a tramp coming on the berth at irregular intervals. The cost of insuring the cargo by a liner—a course which prudence dictates—is almost invariably less than by a 'tramp,' and there are other advantages attached to the regular boat, such as that implied by the term 'regular,' and the custom frequently in vogue of allowing shippers, confining their business to certain specified lines, a rebate or reduction in the freight, which is payable at fixed intervals, usually six or twelve months—same being known as a 'deferred rebate.'

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Under the term 'purely cargo boat,' we include those vessels which do not take more than twelve passengers, —were they to carry a greater number they would come under the denomination of 'passenger steamer,' requiring special survey by the Board of Trade, as set forth in the Merchant Shipping Acts. The function of the Board of Trade, when we speak of ships, is to undertake the general superintendence of all matters relating to merchant shipping and seamen. These cargo boats form a splendid service, are worked more economically than mail and passenger steamers, and usually carry at a lower freight than their faster rival. In many cases, however, the cargo line is auxiliary to the mail service, though the mail steamer may charge what is known as a differential rate of, say, 2s. 6d. or 5s. per ton on cargo, and where quick delivery is essential the difference is of no consequence.

LINER.

As we are about to make a long voyage we naturally select one of the lines of mail steamers, and

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if we had business to do in any of the South American Republics we would be wise in making such a selection altogether apart from the questions of safety, expedition and comfort. In South America, as in other countries, if we desire to take any standing, the steamer in which we arrive had better not be a 'tramp,' or a cargo steamer, if our means will admit of our making the journey in one of the first-class lines,—the fares by which to South America are really very moderate, considering the length of the voyage.

Now, in pursuing our enquiry as to the ship to travel in, we find the following lines from Europe connect with South America :—

Name of Company.	Nationality.	Ports of Departure.	Class of Steamers Employed.
The Pacific Steam Navigation Co.	British.	Liverpool.	Fortnightly line of mail steamers to Brazils, River Plate, Falklands and West Coast of South America.
Do.	do.	Glasgow & Liverpool.	Monthly line of fast cargo boats to Brazil, Uruguay, Argentina, Chile and Peru.
Royal Mail Steam Packet Co.	do.	Southampton.	Fortnightly line of mail steamers to Brazils and River Plate.
Do.	do.	London.	Occasional cargo boats to Brazils and River Plate.
Do.	do.	Southampton.	Fortnightly mail line to Colon for West Coast of South America, *via* Panama.
Do.	do.	London.	Occasional cargo boats to Colon for West Coast of South America.

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Name of Company.	Nationality.	Ports of Departure.	Class of Steamers Employed.
Harrison Line.	British.	Liverpool.	Fortnightly line of cargo steamers to Brazils.
Do.	do.	do.	Fortnightly line of cargo steamers to Colon for West Coast of South America, *via* Panama.
Lamport & Holt.	do.	Glasgow & Liverpool.	Fortnightly line of cargo steamers to Bahia, Rio de Janeiro and Santos.
Do.	do.	do.	Fortnightly line of cargo steamers to Montevideo, Buenos Aires and Rosario.
Do.	do.	London & Antwerp.	Monthly line of cargo steamers to the Brazils.
Do.	do.	do.	Three weekly cargo lines to Montevideo, Buenos Aires and Rosario.
Do.	do.	Glasgow & Liverpool.	Monthly line of cargo steamers to Chile, Peru and Ecuador.
Booth Steamship Co., Ltd., and Red Cross Line.	do.	Liverpool.	Line of passenger and cargo steamers to Northern Brazils and River Amazon.
Houlder Bros. and Co., Ltd.	do.	Liverpool, London & Antwerp.	Line of cargo and passenger boats to the River Plate.
Houston Line.	do.	Liverpool.	Fortnightly line of cargo boats to the River Plate.
H. & W. Nelson, Ltd.	do.	do.	do. do.
Allan Line.	do.	Glasgow & Liverpool.	Monthly line of cargo steamers to the River Plate.
David MacIver Line.	do.	Liverpool.	Fortnightly line of cargo boats to the River Plate.

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Name of Company.	Nationality.	Ports of Departure.	Class of Steamers Employed.
Gulf Line, Ltd.	British.	Glasgow & Liverpool.	Monthly cargo line to Chile, Peru, and Ecuador.
Prince Line.	do.	London.	Three-weekly passenger and cargo service to the River Plate.
Leyland Line.	do.	Liverpool.	Passenger and cargo steamers to Colon for West Coast of South America, *via* Panama.
New Zealand Shipping Co., Ltd.	do.	London.	Call at Montevideo, on homeward voyage only.
Shaw, Savill and Albion Co., Ltd.	do.	do.	Call at Rio de Janeiro on homeward voyage only.
Hamburg-American Line.	German.	Hamburg & Antwerp.	Passenger and cargo line to Colon for West Coast of South America, *via* Panama.
Hamburg-American Line, and Hamburg-South American Line.	do.	do.	Passenger and cargo lines to Brazils and River Plate.
Norddeutscher Lloyd.	do.	Bremen.	Passenger and cargo boats to Brazil and River Plate.
Kosmos S.S. Co.	do.	Hamburg & Antwerp.	Line of passenger and cargo boats to West Coasts of South, Central, and North America.
Cie des Messageries Maritimes.	French.	Bordeaux.	Fortnightly line of passenger and mail boats to Brazils and River Plate.
Do.	do.	do.	Line of cargo boats to Santos and the River Plate.

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Name of Company.	Nationality.	Ports of Departure.	Class of Steamers Employed.
Chargeurs Réunis.	French.	Havre.	Passenger (3rd class only) and cargo steamers to Brazil and River Plate.
Cie Générale Transatlantique.	do.	St. Nazaire, Bordeaux, Marseilles & Barcelona.	Passenger and mail steamers to Colon for West Coast of South America, *via* Panama.
Soc. Générale de Transports Maritimes a Vapeur.	do.	Genoa, Marseilles & Barcelona.	Passenger and cargo boats to Brazil and River Plate.
Navigazione Generale Italiana & La Veloce. (Joint Service.)	Italian	Genoa and Barcelona.	Passenger and cargo boats to the Brazils and River Plate.
Societa La Veloce.	do.	do.	Passenger and cargo boats to Colon for West Coast of South America.
Italia S.S. Company.	do.	Genoa.	Passenger and cargo line to the River Plate.
La Ligure Braziliana.	do.	do.	Passenger and cargo service to the Brazils.
Cia Trasatlanticá de Barcelona.	Spanish.	Barcelona.	Passenger and cargo line to Montevideo and Buenos Aires.
Do.	do.	do.	Passenger and cargo line to Colon for West Coast of S. America, *via* Panama.
Sociedad Anonima de Navegacion Trasatlantica.	do.	do.	Passenger and cargo line to the River Plate.
Zuid Amerika Lijn.	Dutch.	Amsterdam, Dunkirk & Boulogne.	Passenger and cargo service to the River Plate.

Being Britons, we naturally select a ship of our own nationality, and our choice, as we prefer to travel in a first-class liner and our first port of call in South America is Pernambuco, is limited to The Pacific Steam Navigation Company and the Royal Mail Steam Packet Company, both old established lines working under Royal Charters, enjoying subsidies from His Majesty's

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Government for the conveyance of mails, and both established about the year 1840, the former being the first line on the West Coast and the latter on the East Coast of South America. It is a question whether, except in the matter of prestige, a Royal Charter is an advantage to a Company, as it limits and circumscribes the powers of the Company, but there can be no doubt that a 'subsidy,' or payment for the conveyance of mails, generally affords an appreciable income to the liners. We use the word 'generally,' as in these days of cheeseparing by the Government, and looking at the conditions as to speed, regularity of service under penalty, and other obligations attached to the subsidy, shipowners may doubt whether it would not be better to be free and without the fixed annual mail payment. It is a short-sighted policy which seeks to burden the means of transportation between its own and other countries, and one which, if not broadened, may leave an open field to our foreign rivals, whose Governments are alive to the importance of supporting the Mercantile Marine in every possible way, and whose highest dignitaries in some cases will even go out of their way to wire their congratulations to the owners and builders of new steamers likely to enhance the reputation of the country and improve its trade with the world at large. It is not often that a British shipowner's services to the State are recognised unless he spends his spare cash—if he has any,—pretty freely in support of the political party he favours, or in some way altogether foreign to the good progressive work he is doing,—work of national importance.

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Having made up our minds that we shall commence our travel in one of the mail steamers of the lines named, we find on enquiry that the passage business of the two great companies has been combined, and that as the tickets are interchangeable we can have the great privilege of breaking our voyage, if we wish, without extra payment at any of the ports of call between Europe and the River Plate. We decide, however, in favour of The Pacific Steam Navigation Company, and shall now take our heavy baggage down to the Alexandra Dock, Liverpool, and embark later at the Prince's Landing Stage, Liverpool, when the steamer comes alongside.

We might send the baggage down instead of taking it, but as we want to see what kind of cargo the steamer takes outwards, and find out whatever else of interest we can in the short time at our disposal, we prefer to go personally. We have already made arrangements for the insurance of our baggage, as the steamship company is not liable for same, and we find on enquiry that only 20 cubic feet of baggage is allowed to first and second-class passengers and half that quantity to steerage. 40 cubic feet measurement usually represents a ton weight in regard to cargo, we are told, though in some trades and for particular articles this varies. As we have more than the quantity of baggage we are entitled to carry free, we pay the excess charge, say 1s. 6d. per cubic foot, to the East Coast of South America, and get a printed receipt. Our trunks have been specially made to fit under the sleeping berths, so we have no further trouble or arrangements to make

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regarding them, and our large packages go into the baggage room.

R.M.S. "OROPESA."

There are, fortunately, two Pacific steamers alongside the quay when we arrive, one discharging, and the other which we are going in,—the 'Oropesa,'—loading, so that we are able to get some idea of the exports to and imports from South America. The work of discharging and loading, we find, is done by parties licensed by the Mersey Docks and Harbour Board, called 'master porters,' 'master stevedores,' and 'master lumpers.' It is the duty of the 'lumper' to discharge, the 'stevedore' to load, and the 'master porter' to perform the several operations on the quay, such as receiving, sorting to bill of lading marks,

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weighing, measuring, marking, examining for damage, trucking, watching and delivering to carts or railway wagons. In the case of steam vessels, the owner or one of his officials, if qualified by license, is the master porter, but in all other cases the consignee *bonâ fide* paying the largest amount of freight is entitled to be the master porter, if qualified.

Each port has its own customs, and of course the fore-going remarks must be taken as applying to the Port of Liverpool, but mention is made of the several operations as a charge is made for master porterage, and there are similar charges at other ports, as well as charges for dues and forwarding. These we must be careful to ascertain if later we embark in business as merchants, as otherwise we may find ourselves in a street known as 'Queer Street,' in which are assembled people who buy goods for £5 per ton and have to sell for less and 'live on the profits.' Before we can as a general principle safely sell merchandise we must be able to calculate to the last farthing, or approximately, what the cost of same will come to, and we must further make use frequently of the cables between the two countries to keep in touch with markets which are constantly varying, prices going up and down according to the demand and supply of the several commodities, and frequently from extraneous causes, such as rumours of war, revolution, quarantine on account of plague, or yellow fever, Exchange 'canards,' &c.

Both outward and homeward cargoes, of vessels in the South American trade, are very mixed. Outwards there are large quantities of railway materials,

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machinery, hardware, haberdashery, silk, cotton, and woollen goods, bedsteads, mattresses, bagging, boots and shoes, cables, canvas, ropes, chemicals, cement, flour, linens, earthenware, carpets, and floorcloths, gas meters, stoves, paints, iron and steel in axles, bars, plates, etc., paper, pianos, pipes (iron and steel), provisions (tinned and bottled), saddlery, sheep dip, tools, smallwares and other articles too numerous to detail. Coal we have not referred to, as, although the steamers sometimes take it out on freight to fill up vacant space, it is usually shipped in sailing vessels. This business is a very large one.

At the discharging quay we find that the homeward cargo is also a very mixed one, and consists chiefly of ores—copper, silver and tin,—wool, cotton, cotton-seed and cottonseed cake, oilcake, sugar, hides, tallow, skins, honey and grain, coffee, leather and charqui, the latter being dried meat in transit for Cuba. Of course there is the enormous meat trade from the River Plate, but this we shall deal with later, and after we have inspected the Saladeros together at Buenos Aires.

We have now seen sufficient to open our eyes to the wonderful system of trade carried on. Not only is South America engaged in this, but every part of the habitable globe sends forth what it can spare of its productions, and receives in return other articles useful for support, comfort, adornment and progress. One country sends forth the raw material, another the manufactured,—one country rich in food products supplies the wants of others and receives in return all else that tends to make homes and cities habitable and

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beautiful, distance inappreciable, and life worth living. We need not follow this further to understand the intimate trade relationships which exist between the several nations, and to recognise the bond of brotherhood which everywhere unites the human race. There is probably no bond which serves to promote and ensure the blessings of peace more than that of trade, which in its multitudinous ramifications touches great and small interests alike all over the civilised world.

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CHAPTER II.

START. "LONG" SHIP. TWIN-SCREWS. FOREIGN CLERANCE. CONSULAR FEES. PARTINGS. BILGE KEELS. "OROPESA." DIET. STUDY OF CHARACTER. HABITS AT TABLE. STORM EFFECTS. COMPAGNONS DE VOYAGE. LA PALLICE-ROCHELLE. CYCLING IN FRANCE. CORUNNA. SPAIN. IMPORTS AND EXPORTS. TOMB OF SIR JOHN MOORE. SPANISH ARMY. VIGO. SHIPPING BOUNTIES. FRANCE. GERMANY. GENERAL TALK.

THE eventful Thursday morning on which we sail has at length arrived, and we repair to the Liverpool Landing Stage much before the appointed hour. The 'Oropesa' is still anchored in the stream, but there is, we find, a tender leaving the Stage with some fifty to sixty steerage passengers, and as an act of grace we are allowed to go on board by the same opportunity. It is well we came early, as we learn on the tender from one of the officials that the 'Oropesa' will be a 'long' ship, an occurrence which does not frequently happen in steamers sailing from British ports for South America. A Board of Trade officer who is on the tug informs us, in answer to our enquiry, and we are never ashamed to ask from any false feelings in regard to our own ignorance, that the term 'Long,' or 'Emigrant' ship is applied to all foreign-going vessels having fifty or more steerage passengers. These ships require extra surveys, which generally occupy about two days, and include the measuring of the ship and accommodation, inspection of machinery, boilers, lifebelts, and life boat capacity, general seagoing outfit, etc., and the examination of the stores and water for the use of passengers

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and crew ; so that we see the Board of Trade acts the part of a dear old grandmother in seeing that proper provision is made for our safety and well-being. There is no doubt though that this motherly old body is sometimes too officious, often very unreasonable, and more frequently than is at all necessary interferes and worries the shipowners about absurd requirements and matters which they are quite as capable of dealing with themselves, and far more concerned about for the sake of the lives in their custody, their property, reputation and the prestige of their line. It must not be forgotten that all large shipping lines take the risk, or at least a great portion of the risk, on their own ships, that is to say, they insure a large proportion of the value of each ship in their own books, and therefore any accident to, or loss of, their property falls upon themselves. What is the result? They make for safety in every possible way. The steamers are built stronger than they need be to meet the Board of Trade requirements, they are fitted in many cases with twin engines, so that if one breaks down, or an accident happens to a propeller or shaft, the other engine is available, and an accident to both engines on the same voyage, rendering the ship unmanageable, is practically a thing unknown. Further, each of the four navigating officers holds a captain's certificate as well as the commander ; there are six or seven engineers, with the needful complement of greasers, trimmers and firemen, deck hands, and stewards, etc. There is also for our comfort and satisfaction a doctor and a barber. There were about 120 (officers and men) all told on the 'Oropesa,' so that

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we felt quite happy when we got on board, and had not a shadow of uneasiness on any ground.

As the steerage passengers stepped off the tug's gangway they were examined by the medical officer of the Board of Trade, and one or two were rejected on the score of ill-health. This over, the officers, engineers, and crew were mustered on deck, the roll was called, and after medical examination, the emigration officer

BOAT DRILL.

requested the commander to exercise the crew at 'boat drill.' Each boat has its appointed crew, and each man his place. At the word of command these are rapidly taken up, the boats are lowered, and if this manœuvre is efficiently carried out, the inspection is completed. Then the numerous documents detailing the passengers, crew, stores, etc., are signed, and as

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the shipping clerk has come on board with the ship's clearances, the steamer is ready for sea. It is quite a complicated piece of business, the clearance of a steamer for foreign parts. There are the Consular bills of health required by the French, Spanish, Portuguese, Brazilian, Uruguayan, Chilian, and Peruvian Governments, manifests or lists of cargo for the several South American republics, ship's register, articles, and Customs' clearance, passenger certificate, and list of passengers and stores, and other documents. If the steamer failed to have the requisite papers on board, she, *i.e.*, her owners, would be subjected in foreign ports to fines, delays, and other inconveniences. Now, all Consular documents have to be *viséd*, that is to say, bear upon their face evidence in writing that the Consul of the country concerned, located at the port of departure, has seen them and exacted the authorised fees. These fees in many cases amount to considerable sums, and we can well understand that the appointments are eagerly sought after, apart from the social standing which a Government appointment confers, and the knowledge of the expansion and contraction of trade with his native land, and which from time to time he is called to report upon for the guidance of the home government. He is like a sentry guarding the pass into his own country, and if we fail to give the password, or in other language to comply with the requirements of his government, our ship will not be received when she arrives at any of his country's ports.

The 'Oropesa' is now berthed alongside the Liverpool Landing-stage, all the passengers are on

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board, the bell is rung for 'all friends ashore,' the pilot is on the bridge with the captain, and we move away into the stream and out to sea. Many have been the tender partings, for numbers of our fellow-passengers are bound for Valparaiso, some 9,799 nautical miles away, and who knows what hands have pressed for the last time, or what joys and sorrows may brighten or sadden the lives of those we watch, or it may be our own, in the interval of separation, and when the sweet solicitude of those we love, far distant, is but a memory. 'Tis a sad sweet time this parting,—sad because of the separation from our home and friends, and sweet for the revelation of friendships, the depth of which we have not hitherto suspected, and for that deeper love which surrounds and protects us in our homes, and which goes out to us in these supreme moments of separation in a never-to-be-forgotten fulness, the effulgence of which will remain with and gladden us as long as life lasts.

Three parting cheers and we are off; and until we have passed through the channels of the Mersey we are navigated by the pilot. Pilotage at Liverpool is compulsory, as in most other British ports; but in a few, such as Barry, Cardiff, and the ports of the Tyne, it is optional. Rates of pilotage vary with the draught of the ship and the mileage piloted. The draught is ascertained by the scale painted on the stem and rudder-post, and is the depth to which the ship is immersed in the water. The harbour authorities at any port will supply us, if we desire it, with the local rates. Liverpool has about 184 pilots.

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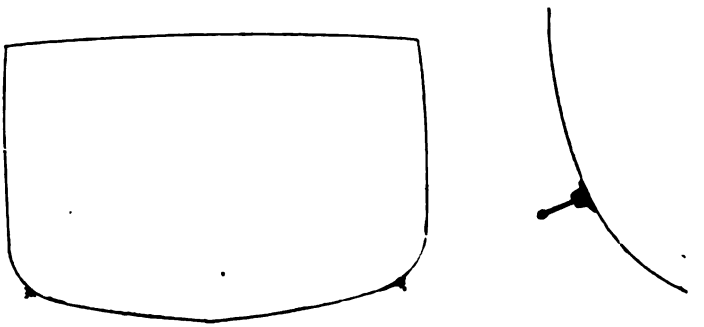
We now pass down the Mersey between the Batteries at New Brighton and Seaforth, which guard the entrance, and out to sea. We are somewhat surprised at the steadiness of the steamer, as some of us have not been to sea before, and when we remark upon the fact to one of the officers, he laconically replies, "Bilge keels!' Of course we all know what a keel is, but what is a bilge keel? A bilge keel is best exemplified thus :—

NEW BRIGHTON.



BILGE KEEL—MERCHANT PATTERN.

and is fitted on either side of the ship at the turn of the bilge, and they are of various lengths and sizes. The bilge keel projects usually from 12 to 16 inches from the side of the vessel. In His Majesty's Service the

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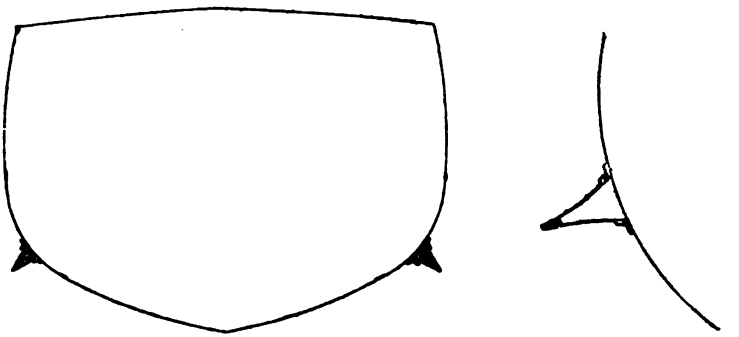
keels run to 28 inches deep, and they are built thus :—



BILGE KEEL—GOVERNMENT PATTERN.

This form would not suit an ordinary steamer, as in case of striking anything it might tear a plate out instead of bending as the ordinary bilge keels will do. There are opponents to bilge keels, but these are ship-builders and not passengers, to whose comfort they add materially, and whilst on cargo boats carrying a homogeneous cargo bilge keels might not be needed, most passenger steamers carry mixed cargoes ; and further, the conditions of stowage are constantly altering by the discharging and taking in of cargo at the different ports on the voyage, that the addition of the bilge keels has undoubtedly tended to steady the vessel. It is important for the cargo as well as for the passengers that the vessel should have bilge keels, as constant and heavy rolling may easily cause damage to the cargo. Another objection to the bilge keel is that it may cause a reduction in speed, but from experiments which have been made, this has been found to be quite

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inappreciable when the keel has been correctly placed. This is in fine weather,—in rough weather it is the opinion of experts that owing to the greater steadiness the bilge keels impart to the ship, they must tend to improve her speed.

We now proceed to settle down, unpack our baggage and make a tour round the steamer. We might almost fancy ourselves in a hotel with luxurious drawing, dining and smoke rooms all lighted with electricity and well ventilated, plenty of promenade room and excellent baths and sanitary arrangements. In fact, everywhere we turn we find evidences of thought for our comfort, and the table offers so much variety that we are frequently puzzled what items to choose, the long bill of fare containing South American as well as English dishes.

Meal times on board ship are usually regarded as the events of the day, and the interest taken in them is generally enhanced by contact with our fellow passengers. There is the interchange of thoughts and opinions, the sharpening of one mind by contact with another, and the never failing and appreciated anecdote or reminiscence which serves to pass a pleasant hour or more. Then there is the study of character, always interesting, and more easily followed at dinner time than possibly any other, when minds expand and open under the genial influences of pleasant fare and good company. 'How do you manage to get your husband into a good humour?' said one lady passenger to another who was known to have been rather unfortunate in her selection of a bad-tempered partner.

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'Feed the monster,' was her immediate reply, and her answer set our party thinking and discussing. Now most of us remembered that one of our old copy book headings, and which we had to do over and over again *ad nauseam* was "Eat to live, live not to eat,' and we fell to speculating how many reversed the maxim, and made eating their principal end in life. How we did abuse the folks who over-ate themselves, and came to the unanimous conclusion that more than half the people in the world practically committed suicide by eating to excess, and how we then, with appetites sharpened by the bracing sea air and the discussion, did possibly more than ample justice to the repast and gave the negative to our own arguments.

It is undoubtedly more pleasant to sit opposite someone who knows how to eat properly and with discretion and enjoyment, than to have for a *vis-a-vis* a traveller who is for ever quarrelling over his food. Nothing is good enough for him, and though he has twenty things to choose from, and eats as much as two or three ordinary mortals, nothing is satisfactory. He has 'travelled,' you know—been down from London to Margate a few times, has lived on the proverbial fat of the land, in the east end of the beloved city, and knows what's what—at least that is how he wishes to impress us—better than any other man alive.

Habits at table when one meets, as on these South American steamers, four or five different nationalities, may readily form a separate study, as it is astonishing in how many different ways the knife, fork, spoon and serviette may be used. A Mr. Deakin,

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who recently published an excellent work on Morocco, writes, *apropos* to national methods of eating, that the Moors, preferring their 'natural forks and spoons,' would consider our habits clumsy and vulgar. He says :

'When it is remembered that the fingers of the 'eater do not actually enter even his own mouth, and 'are scrupulously washed before and after the meal, 'the objection to the fingers of another in our pie 'disappears, especially as our own food is so much 'handled in the kitchen before we see it. Moreover, 'the exceeding gracefulness with which a well-bred 'Oriental conveys the food to his mouth, is not to be 'approached with spoon and fork, and a little ex- 'perience in a well-ordered native house soon dispels 'the prejudices in which we have been brought up.'

A foreigner at our table invited one of his friends to partake of a bottle of wine with him, and then helped himself to half a glassful first. This seemed strange to us, but we found out the reason was that possibly the first wine poured out might contain some dust from the cork, and so the act was really delicately considerate and polite. But here the chief steward interrupted our moralising by saying 'Lights out at eleven, gentlemen,' and we made for the deck for a 'turn' before retiring.

We were somewhat troubled during the night by the heavy weather which set in, but it was astonishing in the morning what a sociable effect the night's experiences had upon the company. There was envy for the good sailor, and possibly genuine sympathy for the bad one. However the coldness of

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the previous day's critical calculations respecting each other, had taken on a warmer and more friendly tone. And there were many in our company from whom we might learn much by judicious cultivation. There was the man who had travelled well-nigh all over the world, and was making the trip for the second time; there were young men going out to try their success in the camp in Argentina and Patagonia; there was the 'gintleman from Ireland,' as eloquent and full of fun as his famous ancestors, and who would amuse the youngsters by starting his pipe in the morning by concentrating the sunlight on it through a large magnifying glass; and there were others, young and old, of both sexes and of many nationalities, from most, if not all, of whom there was something to learn if only cheerfulness. It is not to be wondered at, therefore, that we looked forward to many pleasant days before we reached our destination.

We saw nothing of the land all day, but the next morning we were off the coast of France, and making for our first port of call, La Rochelle-Pallice. La Rochelle we had heard of before, but La Pallice we did not know, being a port created to a large extent by The Pacific Steam Navigation Company.

Formerly that Company's steamers used to call at Pauillac, river Gironde, and passengers were conveyed thence by river steamer or tender to Bordeaux, but owing to the shoaling of the anchorage, about the year 1894, a change had to be made. At first the steamers called at Richard, which is 18 miles nearer the mouth of the Gironde, or 50 miles from Bordeaux.

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The inconveniences attending the long passage by tender were so great that this had to be discontinued in favour of La Pallice. La Pallice, which forms a part of the maritime establishment of La Rochelle, and is distant about four miles from that place by road, and five miles by rail, adjoins a sheltered roadstead of the same name, and is easy of access at all times of the tide and in any weather: the Islands of Ré and Oleron forming a great natural breakwater. The port comprises a tidal basin or open dock (295 feet wide at the entrance) having a water area of 31 acres, a lock fitted with sluicing chambers, a wet dock and two graving docks. There is a landing stage 650 feet in length on the eastern side of the tidal basin, and free and bonded warehouses, moveable steam cranes, and electric lighting apparatus, complete the appliances of the port. Numerous lines of railway have been laid down along each side of the dock. The call at La Rochelle-Pallice, instead of Pauillac or Richard, not only lessens the distance to and from the Spanish itinerary ports, but also shortens the distance by railway to and from the French capital and many other towns in the interior. The journey to Paris is through a beautiful country.

We were met at some distance from the port by the pilot, and there was a race between two pilots for the work, as, whilst pilotage is compulsory at La Pallice, the first pilot signalling the ship claims the pilotage. If it be dangerous to stop and take him on board, and the steamer picks up the second man offering—and she must have one or the other—double

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pilotage has to be paid, a system truly iniquitous. We are soon placed alongside the quay in dock, and on the quay and in the hangar or shed opposite, we

PILOT BOAT.

see the cargo waiting to be shipped. There are also a number of passengers who have come from Paris and elsewhere, and after these had embarked we found that we had at our table a French gentleman who was fully posted in all matters pertaining to French shipping, and who was going with us as far as Lisbon. We determined to cultivate his acquaintance later, with the object of finding out what the French Government does in the way of supporting and encouraging the shipping interests of the country.

The journey to La Rochelle-Pallice, a distance of 605 nautical miles from Liverpool, occupied about 42 hours, and owing to the quantity of cargo to be loaded at La Pallice we found it was necessary to stay there about twenty-four hours. After examining

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the cargo, which we found to consist chiefly of cognac, liqueurs, wines, silk, woollen and cotton tissues, millinery, leather goods, hats, toys, feathers,

LA PALLICE.

Paris goods, etc., we took the train to La Rochelle, and found agreeable occupation for a couple of hours in looking at the old city, which is somewhat reminiscent of Chester; the entrance to the port, the Cathedral and the Hotel de Ville being particularly interesting. One might fill pages with a description of the Sailor's Chapel in the Cathedral alone, with its numerous votive offerings indicative of the terrible incidents through which the votaries had passed, some works of art, others deeply pathetic in their sincere though crude rendering of painful catastrophes, and all

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works of loving labour. Some of our fellow passengers stayed all night at La Rochelle, but we preferred to go back to the ship. It was not our

LA ROCHELLE.

first visit to the town, as we had passed through it previously on our bicycles on the track of a well-known school principal and a number of his pupils. We had read the account of their run down to the Pyrenees, and we found the pleasure of the journey along beautiful roads and through the charming scenery of the South of France quite equal to the encomiums which have been passed upon it. France is certainly a paradise for cyclists and motorists. There is a large business done between Great Britain and France, but as this book concerns South America chiefly, we do not deal with it.

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We left La Pallice with some regret, as we had enjoyed the run on shore, and had also been much amused by watching the bourgeoiserie, who came down from the surrounding country in large numbers to see the steamer. Every facility is given them for the purpose, and it is pleasant to catch their surprised looks as they enter the saloon and drawing room, and to speculate upon their opinions on all they see. They are an honest, simple folk, very much like our own peasantry, but somewhat differently attired.

CORUNNA.

Our next port of call was Corunna, some 362 miles from La Rochelle-Pallice, where we arrived on Monday, and, like all true Britishers, we went on shore to see 'the grave where our hero was buried.' Everyone is familiar with the lines written by

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Rev. Chas. Wolfe on the burial of Sir John Moore, who was killed nearly a century ago in defending the embarkation of the British troops at Villano.

Corunna is an interesting place, and it was doubly so when we were there, owing to the visit of the King of Spain. His Majesty was quartered on board the 'Giralda,' a handsome yacht purchased from an Englishman, and capable of steaming 18 knots per hour. The Spanish war vessel 'Infanta Theresa,' and a gunboat were also in the port. When one thinks of the ancient glory of Spain, and contrasts it with its present decayed condition, one cannot help feeling sympathy with the nation which has done so much in the discovery and the civilising of the continent to which we are journeying. Two or three battleships and a few small craft are all that represent their Navy at the present day. Spain, however, occupies no unimportant place in the commercial world. Her coast line extends 1317 miles, 712 formed by the Mediterranean, and 605 by the Atlantic. With the Canary and Balearic Isles she has an area of 196,173 English square miles. The country is rich in minerals, but not well developed owing to the scarcity of capital. She exports wine, copper, copper ores, lead, iron ores, olive oil, cattle, raisins, oranges, cork, wool, salt, quicksilver and esparto grass, and imports raw cotton, spirits, fish, wheat and flour, sugar, coal, timber, woollen manufactures, machinery, railway material, etc. We compete with France and Germany for the trade.

After visiting the market, which was full of

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excellent fruits, and quite gay with the varied coloured head shawls of the market women, we went up the hill to Sir John Moore's grave. The tomb is in the centre of a small garden, containing one other British memorial, a tablet in memory of the loss of H.M.S. 'Serpent,' close to Corunna harbour, about ten years ago.

The streets and houses in the town were decorated with bunting, the Spanish colours, red and yellow, predominating. The streets are narrow and paved with a kind of concrete slab, and are more like parapets than roadways. A military review in honour of the King's visit was in progress, so that we got some idea of the Spanish soldiery. The scene on the review ground was most interesting, there being, apart from the soldiers, a vast assemblage of ladies in their mantillas and bright coloured dresses, each one shading her face from the hot sun by a fan of varied and brilliant hues. For the most part the people were good looking. There were, however, amidst all this spendour, great evidences of poverty, for hands seemed to be open to receive wherever we turned, and no effort was made to conceal deformity.

The Army is raised by conscription, but exemption from service may be purchased. The terms of service are three years with the colours, and six with the second reserve. On a peace footing, the Army consists of three annual contingents of 40,000, or 120,000 men in all; on a war footing, owing to conscription, of 1,800,000 men. The uniforms

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are elaborate, and the manœuvres were carried out with great precision. We were more than interested in the mule brigade, on account of the recent war in South Africa, and the facility with which the mules were loaded, with guns and ammunition, for mountain service, was much admired. Accidents will happen, however, and one or two mules were overbalanced by improper loading, and rolled in the dust. Altogether we were about three hours on shore, and enjoyed the run exceedingly.

After re-embarking we sailed for Vigo, and were soon engaged in an animated discussion with our French friend. Shipping bounties ('Prime à la Navigation) he said, had been in force in France since January, 1893, and are quite distinct from postal subsidies also granted by the French Government. The bounties are intended to protect the French shipbuilder as well as the shipowner. The bounty paid to the shipbuilder under the law of 1893 was :—

For vessels built of iron or steel, whether steamers or sailing vessels, 65 francs per gross register ton.

For wooden vessels of 150 tons and upwards, 40 francs per gross ton.

For wooden vessels of less than 150 tons, 30 francs per gross ton.

The engines, boilers and all auxiliary machinery receive a bounty of 15 francs per 100 kilogrammes (= at 25 francs 25 centimes per £1 = £6 os. 8d. per ton of 20 cwt.).

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The bounty paid to the shipowner is based on the tonnage of the ship and the length of the voyage performed in accordance with official tables of distance drawn up by the Ministry of Marine.

This bounty was paid for international coasting voyages as well as for ocean voyages, but it was not paid on French coasting trade, that being reserved to national vessels, which are thus fully protected; nor was it paid for short international voyages when the distance from the French port to the foreign port was less than 120 miles.

To be entitled to the bounty the vessels had to be French built or must have been naturalised before the 29th January, 1891. Those naturalised between the date named and the first of January, 1893, were only entitled to half the bounty. Subject to these considerations, the bounty could be claimed by all sea-going vessels sailing under the French flag which were more than 80 tons register (gross) if propelled by sails, or more than 100 tons gross register if propelled by steam.

The bounty was calculated at the following rates per 1,000 miles run :—

Fcs. 1 10c. per gross register ton for steamers, with a yearly decrease of 6 centimes per ton for wooden vessels and of 4 centimes per ton for iron and steel vessels.

Fcs. 1 70c. per gross register ton for sailing vessels, with a yearly decrease of 8 centimes per ton for wooden vessels, and of 6 centimes per ton for iron or steel vessels.

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The maximum rates were only due to new ships, the yearly decrease being calculated from the date of the completion of the ship.

The bounty disappeared altogether at the end of 19 years for a wooden steamer, of 28 years for an iron or steel one, of 22 years for a wooden sailing ship, and of 29 years for an iron or steel one.

Looking at the foregoing, we see that the State largely contributed towards the building of its tonnage, and the encouragement was such that some shipowners built their own vessels, notably the Compagnie des Messageries Maritimes. Then the bounty to the shipowner was such that he could afford to carry at a low rate of freight,—one which he could not live upon were it not for the bounty, and were he in like position with the generality of English shipowners.

No doubt, said our friend, whenever a bounty is granted to national vessels, foreign vessels are bound to suffer, and they suffer the more when, as in France, they are subjected to port dues which are in reality appropriated to the payment of bounties to French vessels. There is much in the foregoing for our Government to consider, and there is happily some evidence at the present time that the question is to some extent being gone into (a Report having been made which we will discuss in a later chapter), but that does not necessarily mean practical result. That may only come when our trade has passed into the hands of other countries, and when the help will probably be wasted in fruitless attempts to recover what has been lost. These are days of keen com-

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petition, not amongst individuals alone but nations, and a nation which leaves its individuals not only to combat with other States, but does all it knows to increase the cost of building and working its ships, and hampers every movement of its shipowners by burdensome charges, levied for purposes quite foreign to the shipping interest, must expect to decline.

A German who sat near us, and who had been silent thus far during the discussion, now volunteered some particulars in regard to the position which his Government took in relation to the first and foremost interest of the country, viz., its connecting links with foreign trade. He said that so far as the services to the east and west coasts of South America were concerned, the German lines received no special help from their Government. They were paid, however, for the mails carried, and goods passing to and from the steamers over the German State Railways were accorded special terms under the Sea Export Tariff. The German lines running to South America, for the most part, he added, ran also to the East and received a mail subsidy for this latter service, so that as the cash went into one general till, it did not matter very much which of the services received the payment, as the whole benefited. The lines receiving the largest mail payments, he averred, were the Hamburg Amerika Linie, the Norddeutscher Lloyd, and the line to East Africa (Deutsche Ost-Africa Linie). The German steam ship company which plies to the west coasts of South, Central, and North America, he added, gets concessions from the Belgian Government for calling at Antwerp.

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The conversation *re* Bounties took place prior to the alteration made in the French law in 1902, but as this again has been modified by the "Loi sur la Marine Marchande," of the 19th April, 1906, I have thought it desirable to insert the following *resumé* of the new law :—

This law provides for a bounty to French ship builders, "Primes à la Construction," and a bounty to French ship owners, "Compensations d'Armement."

The bounty paid to ship builders is as follows:—

1. Vessels of Iron or Steel.

(*a*) Steamers, 145 francs per gross register ton.

(*b*) Sailing vessels, 95 francs per gross register ton.

These bounties are reduced annually by Fcs. 4.50 per ton for steamers, and by Fcs. 3 per ton for sailing vessels, during 10 years from the application of the law, and at the end of that period they remain fixed at 100 francs per gross register ton for steamers, and 65 francs per gross register ton for sailing vessels. Consequently, a shipbuilder would only receive Fcs. 140.50 per ton for a steamer built a year after the application of the law; Fcs. 136 per ton two years after, and so on, and in the same way for sailing vessels.

2. Wooden Vessels, whether Steamers or Sailing Vessels.

(*a*) Vessels of 150 tons or more, 40 francs per gross register ton.

(*b*) Vessels under 150 tons, 30 francs per gross register ton.

When vessels are altered so as to increase their tonnage, bounties on the above scales are paid according to the number of tons added.

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A bounty is also paid to the builders of the engines, machinery—such as steam pumps, dynamos, winches, etc., for steamers and sailing vessels alike, and boilers and boiler tubes for steamers, at the rate of Fcs. 27.50 per 100 kilos.

This bounty is reduced at the rate of 75 centimes per annum for 10 years until it gets down to 20 francs per 100 kilos; it then remains fixed at that rate.

A bounty of 20 francs per 100 kilos is paid on the new portions of machinery which is altered or repaired, or on new machinery, boilers, etc., fitted to a vessel.

Seven-tenths of the above-named bounties are paid as soon as the vessel is registered, if she is to sail under the French flag, or as soon as she is cleared at the Customs if she is to sail under a foreign flag.

The remaining three-tenths are only paid to vessels registered under the French flag (two-tenths one year after registration, and one-tenth two years after registration). Consequently, for a vessel built to sail under a foreign flag, the builder only receives seven-tenths of the bounty. Exceptionally, wooden vessels get the whole of the bounty immediately, whether they are to sail under the French or under a foreign flag.

So far as regards vessels which are intended to benefit by the "Compensation d'Armement," the ship builders' bounty is limited annually to 50,000 tons (gross) of steam tonnage, and to 15,000 tons (gross) of sailing tonnage, until the expiry of the law of 7th April, 1902.

The bounty is restricted to vessels of which the engines and boilers, as well as the hull, have been built in France, and of course applies only to vessels for the merchant service.

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The bounty will not be paid to ship builders having more than 10 per cent. of foreigners amongst the workmen employed in their factories, yards and workshops.

Compensations d'Armement.

The following bounties are paid on vessels sailing under the French flag on ocean voyages or in the international coasting trade.

Steamers.

4 centimes per gross ton and per day up to 3,000 tons.

3 centimes per additional gross ton and per day from 3,001 to 6,000 tons.

2 centimes per additional gross ton and per day from 6,001 tons and upwards.

Sailing Vessels.

3 centimes per gross ton and per day up to 500 tons.

2 centimes per additional gross ton and per day from 501 to 1,000 tons.

1 centime per additional gross ton and per day from 1001 tons upwards.

The bounty is paid on vessels of 100 tons and upwards, whether they are French or foreign built, except that a foreign built vessel must be less than two years old at the time she is naturalised.

The allowance is made during the period for which the vessel has her full crew engaged, barring accidents, that is from the time all hands have signed on until they are paid off, and is reserved exclusively for vessels which can prove an average daily run of:—

90 miles for steamers whose speed on their official trial (half loaded) was 14 knots and upwards.

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85 miles for steamers of an official trial speed of 12 to 14 knots.

65 miles for steamers of an official trial speed of 11 to 12 knots.

55 miles for sailing vessels.

Further, it must be proved that the vessel has carried from the time of leaving a French port to the time of returning to a French port, cargo equal, in freight tons, to a third of the nett tonnage of the ship, and this for at least a third of the whole voyage.

The bounty is reduced by 10 per cent. for vessels which have not carried cargo equal, in freight tons, to at least half their nett register tonnage during at least half the whole voyage.

It is reduced by 15 per cent. for steamers whose speed on their official trial was less than 10 knots but equal to, or above, 9 knots.

No bounty is paid on vessels whose official trial speed was under 9 knots.

The bounty is increased by:—

(*a*) 10 per cent. for vessels whose official trial speed was at least 14 knots.

(*b*) 20 per cent. for a speed of at least 15 knots.

(*c*) 30 per cent. for a speed of at least 16 knots.

The bounty is reserved for vessels whose port of registry is situated in France.

The bounty is paid on all ships coming within the scope of the present law until they reach the age of 12 years, and the law has been passed for a period of 12 years.

The great difference between this law and the law of 1902 is, that under the law of 1902 a bounty entitled

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"Prime à la Navigation" was paid on French-built vessels, and a separate bounty, at a different rate, entitled "Compensation d'Armement," on foreign-built vessels, though French-built steamers could choose between the two.

Under the present law there is only one bounty, "Compensation d'Armement," and this is paid on French and foreign-built vessels alike.

Another difference is that the "Compensation d'Armement" under the law of 1902 was limited to a maximum of 500,000 tons of steam tonnage and 100,000 tons of sailing tonnage, whereas there is no maximum under the law of 1906.

Vessels built or naturalised under the previous laws still profit by them for the periods specified therein.

The law of 1902 was more advantageous to steamers up to 6,000 tons than that of 1906, but then the tonnage participating in the bounty is limited under the law of 1902 and unlimited under that of 1906.

The total bounty to shipbuilders under the new law must not exceed two millions sterling, which will allow of the building of 50,000 tons of steam tonnage yearly, and 15,000 tons of sailing tonnage yearly, this in addition to vessels already laid down before 13th March, 1902. As regards ownership, the standing French laws require that at least half the property in any French merchant vessel shall be vested in persons of French nationality.

The new law stipulates with regard to joint stock or other companies owning ships, and claiming the advantages of the law, that the majority of the Board of Directors, the Chairman or General Manager shall be of French nationality.

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CHAPTER III.

YARNS. VIGO HARBOUR. MARKET. LEIXOES. SHIP'S TIME. PORTUGUESE IMPORTS AND EXPORTS. ARMY AND NAVY. LISBON. CINTRA. LIFE IN THE STEERAGE. CRICKET. PLEASANT TALK. SHARKS. MORE YARNS. OBJECTS OF INTEREST. TENERIFFE. MUSIC. ST. VINCE' T. THE CRICKET MATCH. COALING AND CABLE STATIONS.

IT was only natural next morning that after so much tall talk we should be inclined to take things easy, and as we were somewhat silent at breakfast,—strange how quiet we get at this meal as we get older,—one of the American ladies facetiously remarked that we were not quite so smart as we were the evening before. Talking of smartness, she said, reminded her of a friend of hers in New York who wanted to put an end to the visits of a rather tiresome but pushing lady acquaintance. After submitting to her visits for a time, and wanting to stop them, she determined that on the next occasion, she would not offer her a chair. When the lady called she apparently took no notice of the incivility, but a fortnight later she came again and brought a camp stool with her They were good friends after that. 'That was a smart act,' said the gentleman opposite, and it reminded him of a smart reply made by one of the old Cunard skippers. He was a petulant, caustic old fellow, who could not bear to be spoken to on duty. One day he was endeavouring to take his regular observation of the sun, but after several attempts, rendered ineffectual by the intervening clouds, he got angry, and after easing his mind in alleged seamanlike fashion, he

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shut his instrument up with a bang and was moving away, when a lady sitting near mischievously said, 'You failed to make your observation to-day, captain.' The old fellow tartly replied, 'Yes, madam, but you have not failed to make yours.'

As the fish came on the table, an Englishman who was bound for Vigo, and who said there was some good fishing to be had in the neighbourhood, commenced to yarn, and when fishermen begin the rest of the company may just as well be silent, as they will not have what is familiarly styled 'the ghost of a chance.' He had been fishing in the neighbourhood last summer, and had caught such a large trout that after landing it the water went down two inches, and, as we smiled somewhat, he said he was prepared to take his 'davey' (affidavit) on it. 'I quite believe the story,' said our Hibernian friend in his most serious vein, 'for I remember a tale of one of your countrymen who trained a fish to come out of the stream and walk over the bridge, crossing it on its fins, until one day it fell between the planks and was drowned.' The doctor, who happened to hear the last yarn, said it was on a par with that of the lady who tried to drown a cat in a bucket of water. As we had not heard the story, he went on to say, 'Well, she tied a brick to the cat's neck and placed it in the bucket, with a slate on top. Next morning, when she went to take the cat out, she found it sitting on the brick, having drunk all the water.'

Meanwhile we had come to an anchor in the fine harbour of Vigo, having performed the run of 133

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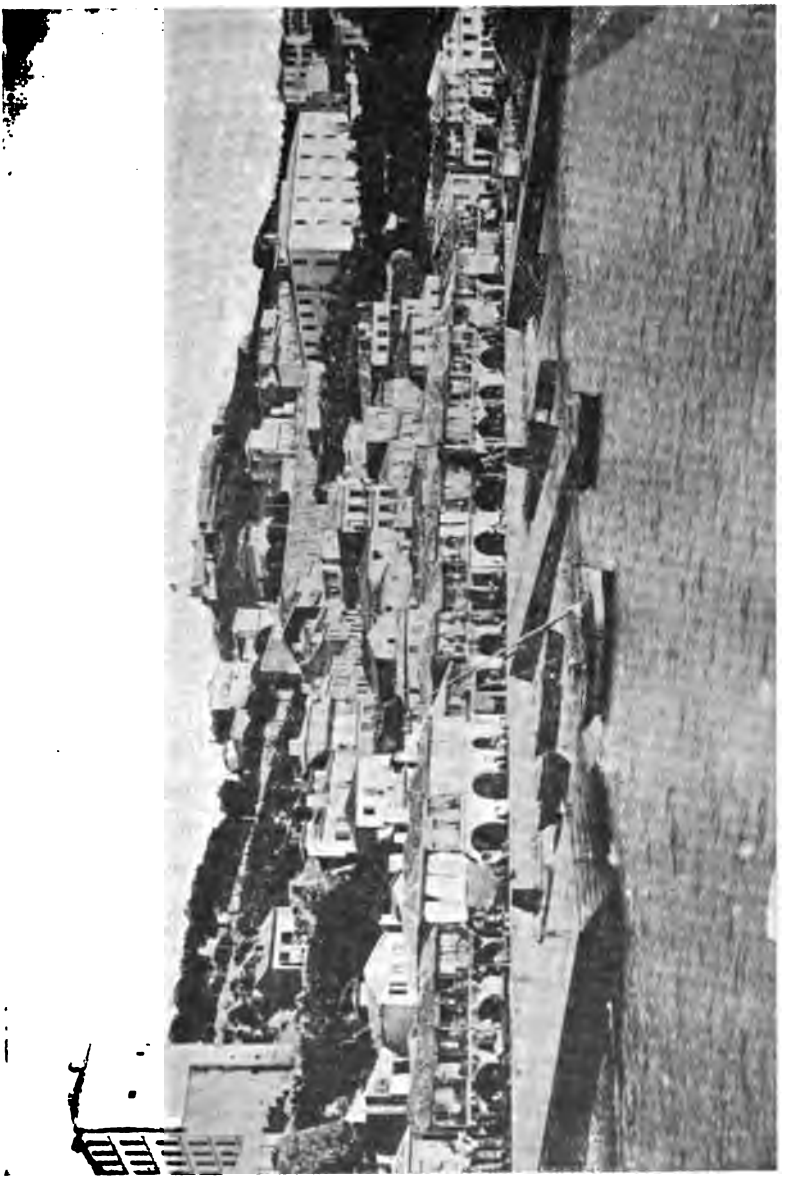

VIGO.

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miles from Corunna in 12 hours. The Bay of Vigo is almost landlocked, the islands of Cies protecting the entrance, and the surrounding mountains looked beautifully green and fresh in the morning sunlight. Boats from the shore, laden with fruit, came off very early, and a good business was done with the steerage passengers. A large trade is done at the port in sardines, and a small one in wine.

We went on shore, and found the town decorated in anticipation of a visit from the King. It was market day, and in a Spanish town the sight is well worth seeing, and always full of variety. The fish market was literally packed with sardines, large and small, some mackerel, and a fish very much like an octopus. The fruits and vegetables were in abundance, but the finest sight of all at Vigo was the cattle, sheep, and pig market, occupying several fields on the hillside behind the town. The Spanish cattle looked splendid with their large horns and tawny skins. The peasantry, in their picturesque costumes, bargaining with the townsfolk, the horsemen with their gay trappings, and the beggars innumerable mingling together, made a living picture not readily forgotten. One of our company tried to bargain for a number of lambs to send home to his wife, but judging, from his remarks, that his wife had enough already, we intervened, and having got him back in safety to the ship, started him on a game of '*bull* board' to work off his superabundant energy.

At 3 p.m.—about six hours after leaving Vigo—we made the port of Leixœs, but had no time to travel to Oporto. It takes an hour to go and come from

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there, by any of the three means of communication, viz., train, electric and steam tram. There certainly is not much to see in Leixœs, the harbour is a bad one to

OPORTO.

'make' on account of the exposed condition of the entrance, and the anchorage inside is very limited. We shipped a quantity of port wine, but lost a couple of our passengers who thought they had time to run up to Oporto, and we then steamed away for Lisbon, our last port of call in Europe, and where our lost passengers re-joined the ship, having come on by rail. As the man in the crow's-nest sounded three bells (9.30 p.m.), and sang out, 'all's well,' we deemed it a good time to settle down to our letters for home, as we wished them to be sent off with the mail in the morning.

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With regard to ship's time, I ought to say that the twenty-four hours are divided into seven parts, and the ship's crew is divided into two parts, called the 'port'

OPORTO (RIVER).

and 'starboard watches.' Each watch is on duty four hours, excepting between four and eight p.m., when the time is divided into two watches of two hours' duration each, called 'dog' watches, by means of which the watches are changed every day, and each watch gets a turn of eight hours' rest at night. First watch, 8 p.m. to midnight; middle watch, midnight to 4 a.m.; morning watch, 4 a.m. to 8 a.m.; forenoon watch, 8 a.m. to noon; afternoon watch, noon to 4 p.m.; first dog watch, 4 to 6 p.m.; second dog watch, 6 to 8 p.m. The watches of the senior officers in charge of the

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steamer's bridge are each of two hours' duration, giving every officer two hours on duty and four hours off.

Bells are sounded every half-hour, commencing at 12.30 a.m. with one bell, and so on until 4 a.m., which is 8 bells. 4.30 a.m. is one bell again, and these periods of 8 bells continue in rotation until 4 p.m. We then have two periods of one to four bells during the dog watches, and then resume 1 to 8 bells again.

At 5.30 a.m. we were at anchor in the Tagus, off Lisbon, having performed the run of about 175 miles from Leixœs in 12 hours. As we did not wish to go on shore until after breakfast, we made some enquiries as to the imports and exports of Portugal, and found that the former consist of manufactured goods, hardware, cotton and woollen stuffs, machinery, wheat, sugar, dried fish, coal, &c. ; and the latter, to the extent of one-half, of wine, which is the principal product of the country, the other moiety being made up of cork, cattle, copper ore, fruits, oil, sardines, and salt. The country is not in a good way financially, as the revenue is less than the expenditure,—the national debt amounting to about £31 per head.

The King of Portugal was on board his yacht not far from the town, and the 'Oropesa' saluted by dipping her flag as she passed. Portugal has an army of about 34,000 men when at peace. In war time she can raise about 174,000. She has a navy of about 40 steamers, but many of the boats are old and of little if any use.

The city of Lisbon is particularly interesting with its fine squares, and large public buildings. 'Roly

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Motion ' Square is possibly the best of its kind, and it would, we thought, be somewhat amusing to see a ship's fireman walk across it after a day on shore. The flag work of the Square is laid in suchwise that to the eye it presents an uneven appearance, although perfectly flat. Scarcely anyone can walk on it at first without hesitation, the optical delusion being perfect.

The thing, however, to do, if time permits, is to take train from Lisbon to Cintra. This is a delightful

CINTRA.

run through a charming country, beautified by its orange and lemon groves, its forests of oak, chesnut, pine and cork. Quite an extensive business is done at Lisbon in oranges, limes and cork. The cork can be stripped after the tree is ten years old without injury to the tree.

The drives round Cintra, when that delightful spot is reached, are perfect—in fact the place is a small Paradise. The Pĕna Palace, standing on the

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pinnacle of a hill some 1,800 feet in height, looks quite romantic and commands a magnificent vista; unfortunately we were unable in the short time at our disposal to inspect it.

All things, however, good and bad, come to an end, and we had to hurry through much we would have liked to enjoy leisurely, in order to rejoin our steamer: her overland mails were expected to be on board by 4 p.m., when the anchor would be weighed. The third-class passengers were having a good time when we got on board, singing and dancing in their own Galician fashion, and cracking their fingers in imitation of the castanets.

CINTRA.

It was amusing to watch them, and they apparently enjoyed the plaintive music. They were a merry lot, though their tunes seemed sad. Their hopes ran high, no doubt, when turned towards the vast and resourceful country to which they were emigrating, and these gave warmth and motion to their dance.

We were soon under weigh and passing by

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the Moorish Tower of Belem out into the broad Atlantic. The sea was almost as blue as the Mediterranean, calm as the proverbial millpond, and there was just enough breeze to temper the heat of the day. The boys talked of cricket for the

CRICKET ON BOARD.

morrow, and getting out their linen suits. Now for cricket on board ship one wants, I think, more craft than science, and some of the old stagers next day, after the nets had been put up and the teams selected, looked out wilily for awkward places to knock the 'tow' balls into. The companionway leading to the main deck below, and a corner where the net did not come low enough to stop the ball from getting on to the steerage deck, proved to be favourite spots, and in spite of close 'fielding' a good many runs were made by the canny batsmen. The bowling was fast and furious, the batting scientific and otherwise—principally 'otherwise'—and the match keenly contested in every way. So satisfactory was it that the talk was that we could easily beat the fellows at St. Vincent, who regularly

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challenge the officers and passengers of the Liners, and almost as regularly thrash them. Daily practice was at once enthusiastically resolved upon, and the determination made to redeem the position.

The chief officer and doctor entertained the company in the evening with a magic lantern performance on deck, and both being expert photographers, some exceptionally good and rare plates were shown. After that some pleasant talk was indulged in, and amusement obtained by getting some of our Spanish friends in whose language the aspirate is silent, to say in a breath, sounding every 'h,' the well-known imposition: 'tis not the hunting with the hounds that hurts the hoofs of the horses, but the hammer, hammer, hammer on the hard, high road.' One man said it reminded him of a 'Dicky Sam' (Liverpudlian) who used to say 'I never 'ave an 'oliday but I go to 'Oylake, its 'ealthy and its 'andy, and its within 'ail of 'ome.' Then the steerage set up their never-ending 'Ta ral a la,' and their castanets commenced to crack, their guitars to tinkle, and over all the noise made by the water swishing against our ship's sides as she was pushed rapidly forward, mingling

EMIGRANTS ON BOARD.

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with music, created a feeling too much akin to perpetual motion or the bagpipes, and we were fain to seek the repose our bunks afforded.

Next morning someone casually remarked that he had seen a shark, and the conversation then turned upon these and other monsters of the deep. One or two stories were told which interested us and which may bear repetition.

The skipper's yarn:

'Some years ago,' said the captain, 'I sailed on board a barque with a chum who had a pet monkey. Jacko was always up to pranks, and kept the whole ship's crew in good humour with his mimicry. One day, however, sad to relate, he took ill and died. Well, we had all become so fond of Jacko that we determined to give him Christian burial, so we sewed him up neatly in canvas, read the burial service over him, and committed his body to the deep. Next day, noticing a large shark following the ship, we baited a line with a piece of pork, and very soon succeeded in catching and hauling the monster on board. Cutting it open, to our great astonishment we saw the monkey just as we had thrown it overboard, and some fifty small sharks besides. Sharks, when they get frightened,' continued the captain, 'like snakes, swallow their young to protect them from danger, and vomit them later when the danger is past!!'

Some of our party were inclined to be very sceptical as to the truth of this story, and the captain had to put up with a good deal of chaff as to the number of small

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sharks found. He held his ground, however, and strange to say, when we were put in quarantine later, on Flores Island, at the entrance to the River Plate, a fisherman brought a large male shark on shore which he had just caught, and cut it open, and we had evidence to support the captain's statement. Inside there were found the female and three young sharks.

The barrister's story: 'Your story, captain,' said our Irish friend, 'reminds me of a lawyer who once sailed with me on a yachting cruise. We had been on shore, and my friend had changed a five pound note for gold. Being doubtful as to the genuineness of one of the sovereigns, he placed it between his teeth to bite it, but by a strange mischance, some sudden lurch of the vessel, or through one of the stewards falling against him, he swallowed the gold. We at once got him an emetic, but after many attempts all we could get back was 13s. 4d. He couldn't part with his usual fee of 6s. 8d.'

Another man—*apropos* of sharks—said it was a curious fact that a shark's liver increases and decreases with the moon. When the moon is at the quarter the shark is very voracious and will eat anything, having very little liver, but when at the full his liver is enormous, and he is as particular and fastidious as children are in these days of choice and plenty. 'Moral'—said the skipper—'Don't fall overboard when the moon is at the quarter unless you want to be quartered like the monkey.'

There are several kinds of sharks, but the blind shark seems to be the most useful to mankind, as he is har-

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pooned when his liver is at the full in order that it may be reduced to so-called 'cod' liver oil. The skins of sharks are now being used to make 'chagreen,' a tough binding for books, &c. The shark which interested us most, however, was the thresher, the great enemy of the whale, and on which it feeds. It has an enormous tail, which it lifts high out of the water, and brings down upon the whale with terrific force. We were privileged off the Brazilian coast later to witness a fight between these monsters, and we fancied we heard the thud as the thresher struck the whale, although we were at least a mile away. The thresher usually keeps up the fight until it stuns and kills the whale. Every day we saw something to interest us. Now it was a flying fish which, attracted by the light on board at night, had flown through an open port-hole and been captured, and again it was some bird winging its flight across the sea. A bird very much like a dove settled on the boat deck and remained with us for the night, and it frequently happens that tired birds alight on the ship. In the Mediterranean flocks of swallows migrating, alight at times on some passing ship for a temporary rest, covering both decks and spars. It seems strange how birds can find their way. They must be gifted with marvellous instinct and sight, or may it be that atmospheric influences have to do with the direction of their flight? The most pleasant sight on the third day out from Lisbon was Teneriffe, and although we did not call there, the land seemed pleasant and restful to look upon, gladdening to our hearts and inspiring to our friends in the steerage, who recommenced

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twanging their guitars and dancing to some rapid measure.

The weather was constantly getting warmer, and there were rumours of a grand concert to be held on the quarter deck in the evening. There were some musical people on board, and at sea music is always much appreciated, shut off as the small community is from the many pleasures obtainable on shore, and even though the talent may not be up to the professional standard, it always meets with a kindly welcome.

EMIGRANTS ON BOARD.

On our ship we had a musical captain, 'quite English you know,' and he soon roused the spirit of enthusiasm in the passengers, the result being an excellent concert, thoroughly enjoyable to all; the deck being beautified by an excellent arrangement of flags and electric light. There was considerable tact shewn in the placing of the flags, and none of our foreign friends could take umbrage at the positions assigned to their national emblems. How careful one has to be in small and trivial things to avoid offence—just an injudicious placing, or the omission of

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one of the flags, and a schism would have been created which might have marred the rest of the voyage.

Five days had now passed since we left Lisbon, and we were counting the hours when we should put in to St. Vincent, Cape de Verde Islands, and run up our flag of victory. Practice had been vigorously maintained, and the older men had got their legs into running order by prosecuting energetically that coolest

ST. VINCENT (SHEWING NAPOLEON'S HEAD).

of all games in the Tropics, 'tip and run.' The tipping and running were all very well in their way, but the throwing at the wickets was quite another matter. The question was where to hide oneself, as in the wild excitement of the game the ball went flying about in all directions, and more often hit the cricketers than the wickets.

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At last the wished-for day arrived, and in the early morning we dropped anchor in St. Vincent Bay. Soon a flotilla of boats surrounded the ship, and numbers of negro boys, as one of the officers said 'in their birthday suits,' were offering coral and other articles for sale, and also to dive into the sea for coins. Copper would not tempt them, but they dive for any silver coin and secure it before it can reach the bottom. These negroes seem to live in the water, although there are plenty of sharks in the vicinity, and some of the boys had lost limbs in consequence.

The Bay of St. Vincent is almost land-locked, the harbour being nearly surrounded by low mountains of the volcanic order, very bare looking—in fact, more like mountains of mud, with here and there a reddish tint as if some metal existed, but without a vestige of green. At the entrance to the harbour there is a solitary rock about 180 feet high, called the 'Bird' rock, and on the top of this a light-house has been built.

BOYS DIVING.

St. Vincent is a great coaling port and cable

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station. All cables from Europe for the east coast of South America and for Africa pass through this station, which divides the distance of transmission—too great for a direct line—and tends to greater security so far as

NATIVES OF ST. VINCENT.

the cable itself is concerned. The town viewed from the ship presents a picturesque appearance, with its fort, its white houses, and patches of green garden. There are a few trees, principally Acacia—bearing a yellow flower—some cokernut trees, palms and bellas

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sombras (beautiful shadows), so called on account of the pleasant shade afforded by their thick foliage. The wharves and streets were populated principally by negroes and negresses, wearing all kinds of nondescript garments, the children for the most part being naked.

When we went on shore we were careful to hand over all our valuables to the ship's purser, so that we might get them again when we returned. Had we not done this we would have locked everything up, as in port all kinds of people get on board and they cannot all be watched, and the shipowner is not responsible for our baggage—it is in our own custody.

Well, our team had been got together, and in exuberant spirits started for the shore. Some of the cable station fellows were already on the ground waiting for us, and we became unusually silent after inspecting them. Fine athletic men they were, and whatever tall talk we had left, they soon took out of us. The cricket ground was perfectly bare of grass, and cocoanut matting about five feet wide was stretched over the pitch. The 'Oropesa' team won the toss, and elected to bat. Had we decided otherwise we might have made a braver show, as none of our men having ever played on matting before, did not know it was much easier to step off the matting and run on the hard ground than attempt to run on the matting. After our first two batsmen made the attempt of running on the slippery matting, and tumbled continually, to the merriment of the nigger boy spectators, who hurled all sorts of remarks at them in broken English—Portuguese being the language of the natives—we

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found out that, to keep the team on its legs, running on the matting must be abandoned, and the succeeding batsmen gave better results. Soon the ship's team was placed *hors de combat* with only 30 runs to their credit, and then commenced the St. Vincent innings. The 'W.G.' of the island was put in to bat, and single-handed raised the score, to our great discomfiture, dangerously near our total. However, he was well caught in the slips, but the next two men soon put the score on the far side of 50. We were fielding (or rather 'grounding') under great difficulties and a blazing sun, and when any of our men did occasionally 'butter' a good chance, there was an encouraging outburst of derisive shouts from the crowd of scoffing niggers—a most critical audience indeed. The play continued until the score reached the century, and then the home team most considerately agreed to draw stumps. Somewhat wiser, though sadder, our team plodded back to the club-house, where, thanks to the kindness of their competitors, they soon recovered their spirits. We then inspected Wilson, Sons & Co.'s coaling arrangements, which are extensive. The coal is stored on shore under sheds to protect it from deterioration from the sun, and it is then shipped on lighters, of which there is quite a fleet, and taken out under tow to the steamers at anchor in the Bay. There are three or four coaling firms of good standing in St. Vincent, and there are also one or two small repairing establishments and stores, so that vessels requiring same can be accommodated. We next visited the Cable Station, and were much interested in

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what we saw, particularly the appliance for discovering breakages in the cables, which is most ingenious, and has, when occasion required, proved its accuracy.

Naturally, at St. Vincent, our minds turned principally to the subject of coal, and as coal creates an enormous trade with our own country, and forms he chief item of expenditure to the shipowner, we propose to make it the subject of our next chapter.

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CHAPTER IV.

COAL.

WE had noticed at St. Vincent special lots of coal marked as set apart for the Admiralty, who discriminate, like most shipowners, as to the class of coal to be supplied to His Majesty's ships, and whose discrimination is to a large extent due to experiment. Unless compelled by force of circumstances, the Admiralty will only purchase coals of the kind named on their published lists, and which, although somewhat more expensive at first cost than other coals not listed, generate steam more freely, are of slow combustion, leave less ash and clinker, give less smoke, and are less liable to damage the furnaces. It is acknowledged that South Wales coal is the best in the world for steaming purposes, hence the preference given and the higher price paid for it. The following are the coals on the Admiralty List, supplied to the British Navy :—

Albion Merthyr.
Cambrian Navigation.
Cory's Merthyr (Penrikyber, Pentre and Gelli only).
Cyfarthfa.
Dowlais Cardiff.
Dowlais Merthyr.
Ferndale.
Great Western.
Harris's Deep Navigation.
Hill's Plymouth Merthyr.
Hood's Merthyr.
Imperial Navigation.
Insole's Merthyr.
Insole's Cymmer.
Lewis Merthyr.
Lockett's Merthyr.
Maclaren Merthyr.
National Merthyr.
Naval.
Nixon's Navigation.
Oriental Merthyr.
Ocean Merthyr.
Penrikyber.
Powell Duffryn.
Standard Merthyr.
Rhymney Merthyr.
Ynysfaio Merthyr.

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The undermentioned South Wales collieries also supply large quantities of coal for shipping purposes. These coals, though not so well known as those in the Admiralty list, in some cases are no doubt quite equal to their more favoured competitors, and may later also be listed :—

Ebbw Vale.	Craig.
Griffins.	Skyborwen.
Nantyglo.	Abernant.
Lancaster's Navigation.	Werfa.
Powell's Tillery.	Lletty Shenkin.
Blaenavon.	Maritime.
Vartig.	Tylors Merthyr.
Vipond.	Blaengawr.
Abersychan.	Wayness Merthyr.
Llanerch.	Bwllfa.
Llanithel.	Nantmelin.
Tyrpentwys.	Cwmamman.
Cwm Bran.	Dinas.
Risca Black Vein.	Tynbedw.
Caerphilly.	Rhondda Merthyr.
Rudry Merthyr.	Dunraven Merthyr.
Llanbradach.	Bute Merthyr.
Tynsfand Merthyr.	Ffaldan Oriental.
Fernhill.	International.
Glyncorrwg.	North's Navigation.
Tylacoch.	Tredegar.
Rhymney Merthyr.	Newport Abercarn.

Elder's Navigation.

The subject of coal is so interesting, and of such great moment, that some reference to its history and

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formation may be of service. The earliest mention of what we know as coal being used as fuel occurred towards the close of the twelfth century, and there is undoubted proof of the systematic raising of coal in Newcastle in 1239, when a Charter was granted by King Henry III. for that purpose. Coal was raised also in Scotland and Wales in 1291, when a grant was executed in favour of the Abbot and Convent of Dunfermline.

Coal, which is admitted to be of vegetable origin, is usually found in beds or seams, divided from each other by strata or beds of shale, sandstone, or grit, and hardened clay of varying thicknesses, the whole being collectively termed the coal measures. The total thickness of the coal measures in Shropshire and South Staffordshire is from 1,000 to 1,600 feet, in North Staffordshire it reaches 5,000 feet, and in South Wales 14,000 to 15,000 feet, and encloses 80 to 100 seams of coal, each with its underclay, and separated from those above and below by beds of sandstone and shale. It is quite safe to say, therefore, that coal in Great Britain will never be exhausted, as, owing to the temperature, which is said to increase one degree Fahr. for every 60 feet below the surface, starting at 50 degrees Fahr., coal, even with an improved system of ventilation, is not likely to be obtained from a greater depth than 4,000 feet The natural temperature of a coal mine 1,000 yards deep from the surface would be 100 degrees. At a colliery in Lancashire coal is now being worked at a depth of 1,100 yards from the surface. The question of temperature is occupying the attention of the Royal

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Commission which is now sitting for the purpose of investigating the coal supplies of Great Britain. Coal varies in specific gravity from about 1.25 to 1.33, or as from one and a quarter to one and a third times as heavy as an equal bulk of water. A cubic yard of solid coal weighs 2,103 lbs. to 2,243 and since 2,240 lbs. equal one ton, it is quite exact enough to say a cubic yard is a ton weight. A coal seam gives a million tons of coal per foot thick per square mile, though a deduction of at least 10 per cent. should be made from this for loss in working and faults. Seams are of very different thickness and quality—some workable and some unworkable. Seams of less than 18 or 24 inches do not repay the cost of working.

'Nature,' says Professor Huxley, 'is never in a hurry, and seems to have had always before her eyes the adage "keep a thing long enough and you will find a use for it." She has kept her beds of coal many millions of years without being able to find much use for them. She has sent them down beneath the sea, and the sea beasts could make nothing of them. She has raised them up into dry land and laid the black veins bare, and still for ages and ages there was no living thing on the face of the earth that could see any sort of value in them, and it was only the other day, so to speak, that she turned a new creature out of her workshop, who, by degrees, acquired sufficient wits to make a fire, and then to discover that the black rock would burn.'

Coal may be conveniently classed for our purpose into three kinds—anthracitic or stone coal, bituminous, and cannel coal.

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Anthracitic coal, which in colour is black with a black streak, does not soil the fingers when touched, and is less easily kindled than any other kind of coal. It contains from 90 to 95 per cent. of carbon and hydrogen—though the percentage of carbon is very large in proportion to the hydrogen—oxygen and nitrogen in small quantities. It is believed by some that hard coal, *i.e.*, anthracitic, and bituminous as it approaches the quality of anthracitic, is formed of the remains of hardwood forests, such as oak or elm, though Professor Hull, in his admirable work *The Coalfields of Great Britain*, attributes the difference between anthracitic and softer coals to the agency of a high internal temperature, and also to pressure. The softer kinds of bituminous coal are doubtless the remains of softer woods, such as firwood, and also of ferns and other plants.

Bituminous coal, a black coal of various shades containing a streak of greyish black lustre, is calculated to be composed of 73 to 90 per cent. of carbon. The term 'bituminous coal' is somewhat deceptive, as it does not mean that any bitumen or mineral pitch is contained in it, but that the gases oxygen, hydrogen and nitrogen enter more largely into its composition than in anthracitic, and give it a more flaming character in burning. The varieties of bituminous coal recognised are named after their chief properties, viz., free burning, steam or smokeless coal, non-caking coal. These in varying grades approach the anthracitic, and are principally valued for engine and smelting purposes.

Cannel is commonly considered a variety of bitu-

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minous coal. It is frequently found in layers parallel to those in which the bituminous coal occurs. Some experts consider that cannel should be separated from coals proper, as there is a general absence of vegetable fibre in its structure. Its name from cannyl—a candle—is derived from the readiness with which it lights and gives off a steady flame.

From the twelfth to the eighteenth century coal was valued only for its heat; but in the beginning of the latter century the advent of steam gave an added value and usefulness to it, viz., the generation of force,—a force which was to revolutionise the labour market of the world, bring into close relationship distant countries, and be turned to account in the raising of coal itself from depths, and under circumstances, presenting difficulties hitherto unsurmountable. Early in the nineteenth century another channel of usefulness was found for coal in the production of gas or light, a blessing of incalculable greatness, not only to the individual in the matter of comfort, but also in that of enabling work and discovery to be carried on under conditions which previously rendered such impossible.

Warrington Smyth, in his work on coal and coal mining, says :—

'Many new and striking applications of coal have within the last few years rewarded the exertions of chemists. The once useless and fetid products of its distillation have been made to yield sweet scents and savours. From its naphtha are obtained the parafine oil and the brilliant translucent solid parafine, which in brilliancy and purity excels wax itself; and from its

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analine are obtained a galaxy of brilliant colours, among which need only be named the popular mauve and magenta to prove the varied forms under which the products of coal have found their way into the useful arts.'

'Coal,' says Jevons, 'as fuel, or the source of fire, is the source at once of mechanical motion and chemical change. As the source of steam and iron, coal is all powerful.' 'Perhaps,' he continues, 'the most wonderful mode of employing coal is in the ice machine. By such machines we may make fire in the hottest climate produce the cold of the Polar regions.'

The five principal coal-producing countries of the world are the United Kingdom, Germany, France, Belgium, and the United States, and the production during the year 1900 approximated to the following figures:—

United States - -	245,422,000	tons of 2,240 lbs.
United Kingdom -	225,181,000	,, ,,
Germany - - -	109,225,000	,, ,,
France - - -	32,587,000	metric tons.
Belgium - - -	23,352,000	,, ,,

The quantities for 1900 are in all cases greater than in any preceding year, though the production of the United States has exceeded that of the United Kingdom only during the years 1899 and 1900. The official figures for 1901 have not yet been compiled. The production of Germany represents less than half, and that of France and Belgium together about a quarter of that of the United Kingdom.

NOTE.—The production in 1905 shews the enormous increase of over 100,000,000 tons in the United States, whilst the United Kingdom only shews an increase of about 11,000,000.

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The total known production of the world is about 650,000,000 tons per annum, of which the United Kingdom produces rather more than a third, and the United Kingdom and the United States together account for nearly three quarters.

It is interesting, and instructive also, to mark the production of coal in the principal British Colonies and Possessions in the year 1899.

New South Wales	4,597,000	tons of	2,240 lbs.
Victoria	262,000	,,	,,
South Australia	nil		
Western Australia	54,000	,,	,,
Queensland	494,000	,,	,,
Tasmania	43,000	,,	,,
Total—Australia	5,450,000	,,	,,
New Zealand	975,000	,,	,,
Canada	4,506,000	,,	,,
Cape Colony	186,000	,,	,,
Natal	329,000	,,	,,

It will be seen that New South Wales, with an output of four and a half million tons, furnishes over five-sixths of the total coal production of Australia. The output of Australia as a whole, that of Canada and that of Cape Colony were in 1899 higher than any previously recorded. In Natal there was a falling off, presumably owing to the outbreak of the war in South Africa. The Transvaal is not included above, nor are the figures obtainable for 1899. In 1898 its coal production amounted to nearly two million tons.

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The three principal exporting countries are the United Kingdom, Germany and the United States. The figures are—

	Tons.
United Kingdom - - - - -	58,405,000
Germany - - - - - -	18,055,000
United States - - - - -	7,558,000

The coal-producing countries which import coal in excess of the amount they export are Russia, Sweden, France, Spain, Italy and Austria-Hungary, whilst the British Colonies and Possessions which do so are Canada, Victoria, South Australia, Western Australia, Queensland, Tasmania, New Zealand, and the Cape Colony and British India.

The consumption of coal per head of population in 1899 in the countries named below is as follows :—

United Kingdom - - -	4·05	tons.
United States - - - -	3·00	,,
Belgium - - - - -	2·83	,, metric.
Germany - - - - -	1·66	,, ,,
France - - - - -	1·10	,, ,,
Anstria-Hungary - - -	0·39	,, ,,
Russia - - - - -	0·12	,, ,, in 1898.

Apart from the demands of steam shipping, the consumption of coal per head of population is found in the highest proportion in those countries where steam traction and machinery worked by steam are mostly in use, such as the United Kingdom, United States and Belgium ; and the lowest in those countries where machinery is (comparatively speaking) but little used, such as Russia and Austria.

The above statistics have been compiled from the

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statement furnished by the Commercial Labour and Statistical Department of the Board of Trade to the Honourable the House of Commons in June, 1901. It may be taken for granted that every colliery owner praises his own coal, and whilst the price may be taken as an index, to a certain extent, of the comparative value of the coal, popularity with consumers and the consequent increased demand enhances the price sometimes beyond the intrinsic value. In addition to the quality of the coal there are other circumstances which affect the cost, viz., nearness to the surface, improved machinery, cost of labour, &c.

There are naturally great differences of opinion as to the relative values of the coal taken from the various South Wales collieries above enumerated, and any list put forward would be open to a certain amount of question. The best known probably are :—

Albion.
Dowlais, Cardiff (Abercynon).
Penrikyber.
Ferndale.
Ocean.
Nixon's Navigation.
Cambrian.
Locket's Merthyr.
National.
Hood's Merthyr.
Naval.
Dowlais Merthyr.
Standard.
Hill's Plymouth.
Lewis Merthyr.
Insole's Cymmer.
Cyfarthfa.
Powell Duffryn.
Insole's Merthyr.
Great Western.
North's Navigation.
International.

There is no doubt it is very difficult to arrive at a true estimate of the value of the several coals used for steaming purposes, as the conditions as to the ship's

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draft and the weather are constantly varying at sea, though fairly accurate results may be arrived at in stationary engines on shore. Some coals, those of a flaming character, are distinctly bad for furnaces and boilers, and should be avoided. Large quantities of Scotch, Newcastle, North Wales, Yorkshire, Lancashire and other coals are used for steaming purposes, but the opinion of the steam trade hitherto has been that it is better and cheaper in the end to pay the higher prices current for South Wales coal. It may be that in the past sufficient attention has not been paid to the fact that different coals require different methods of consumption. Steamers as at present constructed are adapted for the consumption of the very best South Wales coal, which requires a fierce draught. Softer coals might produce results approximating to South Wales if proper conditions as to draught can be arrived at. Some lines forced to use Lancashire and Staffordshire coals during the strike in South Wales obtained such good results that they have never gone back to the South Wales coal, the difference in price more than compensating for the small extra consumption. Given proper conditions as to combustion—not too much cleaning of fires, and a proper arrangement of fire bars, it is contended by Lancashire colliery owners that the extra consumption over South Wales coal would not be more than 8 per cent., and by South Staffordshire owners that there would be no difference at all.

North Wales steam coal may be taken to be from 10 per cent. to 15 per cent. inferior to South Wales coal. The principal collieries in North Wales are the

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Westminster Brymbo, Vauxhall, Llay Hall, Broughton and Plas Power, Gatewen, Brynkinalt, Bersham, Wynnstay and Black Park.

Scotch coal is certainly not looked upon favourably by the steam trade. Those principally used are Aitken, Glencraig, Gartshore, Denny, and Herbertshire Navigation. Some of these coals it has been found desirable to mix, say in the proportion of two-thirds Gartshore to one-third Denny, and in others the colliery proprietors have deemed it desirable to issue instructions as to firing. There is, of course, an art in stoking as well as in the arrangement of the draught previously named, which shipowners have found to their cost when compelled through strikes or from other causes to employ unskilled men. Some advocate 'thin' and frequent firing, *i.e.*, not more than a few shovelfuls of coal ought to be put on at a time, and no fresh coal added until the white heat developed by the previous firing has begun to die away. It is advocated that 'thin' firing reduces the consumption and the percentages of ash and clinker. Some coals also burn better if slightly wet.

The best descriptions of coal obtainable for bunkering at Newcastle-on-Tyne are from the Mickley, Townley and Priestman's Collieries. Durham coal is also supplied.

The cost of coal represents 25 to 49 per cent. of the outlay in running a steamer, and if we take the consumption of one of our first-class Atlantic liners, say a Cunard or a White Star steamer, at 500 tons a day, and say she steams on an average 182 days in the

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year, her coal bill, using exclusively South Wales coal delivered at Liverpool (which as a matter of fact they do not do on the homeward trip, buying instead a North American coal nearly equal to South Wales), at the present* ruling price for such coal, viz., 22s. per ton, her coal bill will amount to £100,100 per annum.

It will not, therefore, surprise any of my readers when I say that the question of how to economise in the use of coal is one which is ever engaging the attention of engineers, shipbuilders, and shipowners. Power is frequently wasted, and it has been found that engines of the old-fashioned and low-pressure type, consuming about 6 to 7 lbs. of coal per indicated horse power, have been superseded by the present multiple cylinder expansion type with much higher boiler pressures, and these have reduced the consumption to about a fourth of that of earlier times.

Fuel may readily be wasted by an improper knowledge as to its use; for instance, if the intensity of the heat be too great, the earthy parts of the fuel combine with some portion of the carbon and fuse, forming clinkers, and by this means some combustible matter is lost. Engineers consider that this effect takes place at 1,500 degrees. It is therefore inferred that the heat should not exceed 1,200 degrees. As deep an ashpit as possible is also needed in order that the fire may be supplied with sufficient oxygen to aid combustion. One foot of grate surface is usually allowed for about ten indicated horse-power, with natural draught, to about 15 with forced draught.

The three principal points in good coal are rapidity,

*August, 1907.

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duration of action, and resistance to breakage. There is also a further point, viz., its density or capacity for being stored in a small space. To get thoroughly efficient firing, it is considered that the coal should not be greater in size than an egg, and therefore every coal that will not pass a ring of about two and a half inches diameter should be broken and freed frequently, thinly, and equally over the surface of the fire.

The North American coal which holds the best reputation at the moment is Pocahontas. It is a good steaming coal with about 15 per cent. of white ash and clinker, and is considered to be within 5 to 10 per cent. inferior to South Wales coal. It is a very small coal.

There are a number of good North American coals, but our American cousins believe in combination, and they have therefore agreed to sell at the same prices. Those in the combination are :—

Collieries or Brand of Coal.	Loading Point.
Pocahontas - - - -	Norfolk.
Eureka - - - -	Philadelphia.
New River - - - -	Newport News.
Do. West Virginia -	Do.
Pennsylvania - - -	Philadelphia.
West Virginia Steam -	Baltimore.
Do. - -	Philadelphia.
Merchants (Pennsylvania) -	Baltimore.
Tunnelton - - - -	Do.

Coals supplied at Pensacola Harbour have also a good reputation.

The same steamer, running at 11.5 knots per hour, burnt 55 tons per day of Newport News coal as against 58 tons of Lancashire.

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An analysis of the coals from the Merchants coal mines gives the following results:—

Moisture	·67 per cent.
Non-combustible volatile matter	1·52 ,,
Combustible volatile matter	16·78 ,,
Fixed carbon	74·70 ,,
Ash	6·33 ,,
Total	100·00 ,,
Sulphur	·85 ,,

Another of the New River coals gives the following:

Moisture	1·71 per cent.
Volatile matter	25·74 ,,
Fixed carbon	70·65 ,,
Ash	1·90 ,,
Total	100·00 ,,
Sulphur	·53 ,,

This is an excellent coal, the ash being exceptionally low and the volatile matter high. The sulphur is also below the average amount found usually.

These two examples will suffice to give a fair idea of the better classes of North American coal supplied on the Atlantic seaboard. There are many others, of course, of inferior quality, and there are also good coals supplied at the Pacific North American ports.

We are, however, in this work more concerned with coal as it affects South America, to which country large quantities are exported yearly from the United Kingdom.

Coal is found in South America in limited quantities, but that country depends mainly for its supplies

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upon the United Kingdom and Australia. It is impossible in the space at our disposal to enter upon the question of supplies from Australia, except in the brief way in which we do later; but this chapter would be sadly incomplete were we to omit such particulars as are at our command respecting the coal resources of South America.

It was my privilege and pleasure to visit a number of coal mines in the south of Chile, and there is no doubt we shall witness in the near future some important developments in the production of this commodity.

Coal has not as yet been discovered in the Brazils which will bear the cost of working. Coal deposits were, some years ago, found at Tubarão, in the States of Santa Catharina, and at Aroya dos Rabos, in Rio Grande do Sul. Quoting from the *Iron and Coal Trade Review*, the first caused the construction of the Railway 'Dona Theresa,' but after the mine was opened and a cargo shipped to Monte Video, it was found that it would not sell for a price sufficient to pay the freight; and the railway, after many and various experiences, now burns Cardiff coal instead of using the local mine. That of the Aroya dos Ratos is considered somewhat better, but for many purposes it is entirely useless, producing a thick coating of soot on the boilers, and giving a large quantity of ash and clinker. In fact it is of such poor quality that it is considered of no importance; and this is said to be the best coal deposit that Brazil has yet found.

Coal has not up to the present been found in Argentina, although the Government has offered a

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considerable reward (some £4,000) to the fortunate prospector.

Chile, on the other hand, produces some very good coal, the best known and the most highly valued being that from Coronel, the Schwager and Lota Company's mines. The total output of the Schwager and Lota mines amounts to about half a million tons per annum; but this is insufficient for local consumption.

Coals have been found in the neighbourhood of Punta Arenas on the Straits of Magellan at Loreto, but the mine, which we inspected, was only being worked to a small extent near the surface, and the coal produced, whilst used for household purposes, is scarcely fit for steamers. Possibly if the mine—assuming that there are deeper seams—were properly exploited, by means of modern machinery, harder and better coals might be found which would very materially conduce to the prosperity of this thriving Chilian colony. Coal has also been found in Tierra del Fuego, in close proximity to the Straits of Magellan, and a company is in process of formation for working it. If the coal should prove to be suitable for steaming purposes, it will be of great value to ships passing through the Straits, as the nearest Chilian ports at which coal can be obtained are Lota and Coronel. There is a coalfield in the Province of Valdivia, at Catamatun, near the River Tutu, but the results of working were unsatisfactory, and the mines have been abandoned.

The Pacific Steam Navigation Company, and the native Chilian Steam Ship Company (Compania Sud Americana de Vapores), which works in conjunction

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with it on the west coast of South America, as also all other steamers running to the West Coast, are large consumers of Chilian coal, but naturally the largest consumer is the Government, for the use of its railways, &c. Coals from the Lota, Arauco, Rojas, and Buen Retiro mines are also well known, but they are not generally considered as good as Schwager's for steaming purposes. They are all, however, suitable for locomotive and stationary engines, and are bought largely by the Chilian Government.

Through the courtesy of the Arauco Coal Co., Limited, the writer had an opportunity of visiting the Peumo, Colico, and Curanilhué mines. The coal from these mines is bright and clean, but light, and possibly of very quick combustion. The Peumo mine can be worked very cheaply, as good coal is found near the surface in fairly large quantities ; but as it is some distance from the seaboard, the long haulage materially affects the price, say to the extent of about three shillings per ton, and makes it somewhat difficult to sell in competition with the Lota and Schwager coals, which are found close to the ports of Lota and Coronel. The officials of the Arauco Company were of opinion that the Peumo coal, mixed with that from the Colico mine, would make an excellent coal for steaming purposes. The total output of the Arauco Company's mines is about 200,000 tons per annum, and they supply the Chilian Government with some 20,000 tons yearly for the use of their locomotives.

The Curanilhué mine was discovered through a simple act of kindness. An Indian one day was

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watching the operations at the Peumo mine, and as he was given a little tobacco and some food, he said he could point out, many leagues away, a large hole in the mountain from which smoke proceeded, and which was held in great awe by the Indians. In fact, it was their custom to make a wide detour to get out of the presence of what they regarded as the evil spirit. After some further talk with him he agreed to lead an expedition to the spot, and the result was the opening up of the Curanilhué mine,—about 40 miles by rail from Coronel.

It may be useful for reference if I give the analysis of several Newcastle (N.S.W.) coals, as set forth in the Government Blue Book, as a considerable quantity of Australian coal is now consumed on the West Coast of South America. The coal preferred for steamer use is undoubtedly the Southern coal, which comes from the district about 100 miles south of Newcastle. The reason for this is the amount of fixed carbon, and the fact that it does not flare. The following are some of the best of the Newcastle coals :—

Burwood.	Co-operative.	Dudley.
Duckenfield.	Newcastle Seaham.	Wallsend.
West Wallsend.	Waratah.	

The analysis of coals specified below are—

	Moisture.	Volatile Hydro-carbon.	Fixed Carbon.	Ash.	Sulphur.	Coke.
Burwood	1·62	35·58	57·90	4·90	—	62·80
Co-operative	2·45	34·38	58·24	4·20	·73	62·44
Duckenfield	2·59	33·87	56·49	5·61	1·44	62·10
Seaham	1·73	36·01	57·14	4·74	·38	61·88
Wallsend	2·75	34·17	57·22	4·64	1·22	61·86

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In Peru, in the neighbourhood of Chimbote, the coal deposits are said to be large and easily worked, as both anthracitic and bituminous coal exist on the surface and in ridges above the surface. The coal has not as yet come under the notice of the steam trade, and I doubt if it has been worked at all, as no reference is found in any of the Consular Reports to it.

Coal has also been recently discovered in Ecuador, at a distance of about 116 miles from Guayaquil, and six miles from the Guayaquil and Quito Railway at Columbe. The coal has been tested on the railway (not yet completed) with very good results. There are a number of seams varying from one foot to six, and the quantity is said to be practically unlimited. An analysis of the coal has been made, and is as follows :—

Moisture - - - - -	15·9 per cent.
Volatile and Combustible Matter -	47·1 ,,
Fixed Carbon - - - -	30·2 ,,
Ash - - - - - -	6·8 ,,

With the exception of six miles the entire haul of this coal to Duran (opposite Guayaquil) is downgrade. This coal will shortly compete with Chilian for West Coast consumption.

In shipping coal or chartering a vessel to carry coal on freight, it is always well, as a matter of precaution, to ascertain the rate at which same can be insured, as owing to the risk of fire in certain classes of coal, underwriters will, in some cases, not insure at all, and in others demand a high premium.

The great question in regard to our coal supplies

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in general is how long they will last at the present rate of consumption, and from time to time experts have been very much concerned in answering it and foreshadowing trouble in the future. Its disappearance will certainly not come in our time, and as oil is now being brought more freely into use as a substitute for coal, and fresh coalfields are being continually discovered in various parts of the world, I think we can very well, though opposed to my general principle, leave the future in this matter to take care of itself. There is no doubt that liquid fuel has many advantages over coal for steamship purposes. It can be carried in the ballast tanks of the steamers, though these may require extra plating to resist the action of the oil, and as 100 tons of oil will do as much work as 162 tons of coal, though the initial cost of both is about the same, there is a great saving in the time required to put the fuel on board and in the freight-carrying capacity of the steamer by taking oil instead of coal, and also in the wages account, as no coal trimmers are needed, and the stokers can be reduced by two-thirds. If a continuous supply of oil at a reasonable price can be assured the near future will see a great transition from coal to oil, especially as the furnaces can readily be adapted to the altered circumstances, though the construction of suitable places to carry the oil in old steamers is no doubt a difficulty, as the ordinary coal bunkers are not oiltight.

The Wallsend Slipway and Engineering Co., Limited, have fitted at their works at Wallsend-on-Tyne about 100 vessels with liquid fuel-burning installa-

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tions, and they draw public attention to the special feature of the installation whereby coal or oil can be burned at will, so that an owner has the option, in whatever part of the world the steamer may be, of taking either coal or liquid fuel on board, whichever he may find to be most economical, provided, of course, the latter is obtainable.

One of the objections to using oil is the alleged danger of fire, but as it has been proved by actual experiment that residuum oil, *i.e.*, crude oil robbed of its benzine and a portion of its kerosine, can be used, there is absolutely no danger.

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CHAPTER V.

NEPTUNE. CROSSING THE LINE. FLYING FISH AND DOLPHINS. ASTRONOMY. WHIST. CONCERT. FERNANDO NORONHA. PERNAMBUCO. WHALES. CATAMARANS. A SCENE. TRADE OF PORT. POPULATION. RAILWAYS AND TRIPS. FESTAS. CURRENCY. DISCOVERY OF BRAZIL. AMAZON RIVER. RUBBER. MINERALS. IMMIGRATION. COASTING TRADE. TRADE POSSIBILITIES.

WE finished coaling at St. Vincent at about three o'clock in the afternoon on the day of our arrival, and steamed away at once for Pernambuco, some 1,620 miles distant, and where we expected to arrive in five days. The talk was that we should cross the Equator in less than four days, and that it was fully expected Neptune, accompanied by some of his satellites, would come on board to hold his accustomed revel, and baptise those who had never previously crossed the line. There was great excitement in consequence ; but, alas, we were doomed to disappointment. One of the passengers said it was due to the fact that we had so many handsome ladies on board, and the mermaids down below were too jealous to allow the Sea King to come aboard, and possibly he may have preferred the peace of ages to a momentary pleasure. We should certainly have welcomed him, and there were quite a number of men who were searching for collars for the occasion, and who had ceased shaving for a time in order to put to test the well-known keenness of the razor used in the ceremonial rites,—so they said, and we make a point of always believing what we are told.

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Then, of course, there would be the great bath, for Neptune insists upon complete immersion; but he never came, and the reader can quite as well imagine

VISIT OF NEPTUNE—CROSSING THE "LINE."

the reason as the writer. He certainly had visited the 'Oropesa' on her previous voyage, for the captain held the following account of the proceedings, which had been duly published:—

'Up from the vasty deep came the Sea God, 'with crown on head and trident in hand. With 'Amphitrite then came her attendants to receive 'tribute from those who had crossed the line 'before, in the shape of pleasant goods to vary 'the monotony of the fishy diet on which they are 'obliged to feast. So they sat in solemn state on a

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'throne built for their majesties, and presided over 'the shaving process, for which a huge sail was filled 'with water, and the men having been blindfolded, 'were presented each in turn to his majesty, with a 'few remarks as to the character given him by his 'messmates. His majesty, having graciously spoken 'a few words to his new subjects, directed his attendant 'barber which of the great razors to use for the 'shaving. Another moment and they were covered 'with soapsuds, yet another and they were tilted off 'the platform on which they stood into the sail, 'where they were ducked and ducked again by each 'of the 'bears' who came with Neptune for the pur- 'pose. How they spluttered, and how they gurgled, 'as they went down and then came up, whilst the 'greatest good humour and merriment prevailed, and 'laughter held both her sides, for in Neptune's court 'all is ever mirth and jollity.'

If we missed Neptune we at least saw plenty of flying fish, one of which found its way into a lady's cabin at night time, and fluttering around, startled her considerably. It was very much like a small herring, in appearance, with tiny wings. We sometimes took them for birds as, frightened at the ship's approach, they would get up out of the water and skim along its surface for a considerable distance. At other times they leave the water because their enemy, the 'bonito,' or dolphin, is after them, and they require to be very quick to escape. There were numbers of 'bonitos' to be seen, and the ease with which they passed our ship,—which was making at least fourteen knots at

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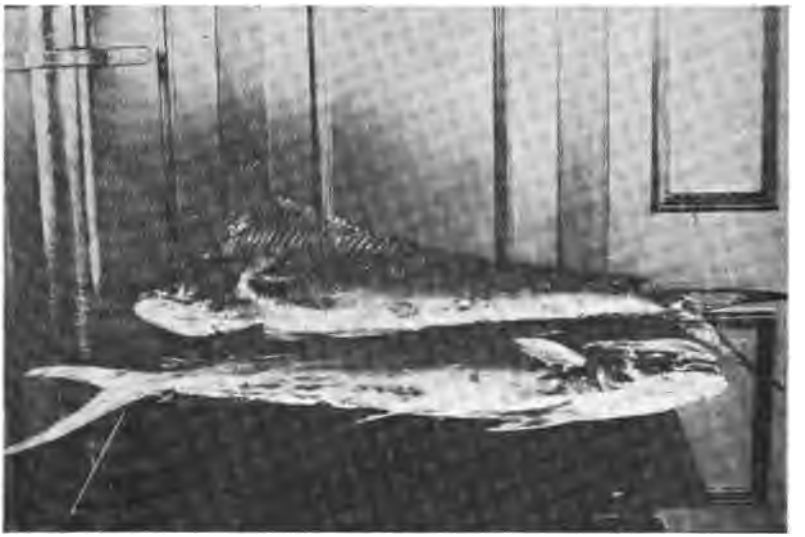
the time,—gave us some idea of the speed at which they can travel. Several sailing vessels passed quite close to us, and the crew of one, a German boat, gave us three cheers.



DOLPHINS.

What glorious sunsets we had every night,—would that I could depict them; and what astronomers we became later when the heavens were ablaze with stars innumerable! A knowledge of astronomy is necessary in the case of the navigator, and to the ordinary traveller the subject is one full of interest and surprising delights. A dispute arose at dinner as to whether the Sun, Moon, and Venus were ever visible together, but it was settled the same night in the affirmative. Whether as the result of the Sun and Venus being seen together, and the old lady Lunar becoming angry, I

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cannot say, but certain it is we had a gale next morning, which somewhat interfered with our comfort. In fact it was so bad that my *vis-a-vis* had to leave the breakfast table, and when asked the reason replied that he, too, had been studying the copy book heading 'Eat to live,' &c. The captain called out to him, 'Tell us another'; but he hurried up on deck without further remark.

It was interesting later to watch the waves, mountains high, striking our vessel, and, after breaking over her bows, bound away from her in clouds of rainbow spray. It was refreshing also as we were experiencing the full heat of the tropics, and it was difficult to keep cool even when not moving. Then there was a great shout from the steerage passengers, and looking over the side we saw the cause of their excitement, as the sea appeared to be literally alive with porpoises, jumping out of the water and having a merry time generally.

A progressive whist party was proposed as a counter attraction for the evening, and after invoking the aid of the various nationalities on board, the rules were produced in four languages, the whole of the passengers invited, and a pleasant evening spent. The Barber managed to provide the prizes, and the 'Boobies' were interesting and caused considerable amusement—that for the lady was a handsome black doll, and for the gentleman a large wooden spoon, with the phrase 'You can beat with this' neatly attached to it. The foreigners proved themselves to be very keen players, especially the Chilians, who play a native game (Rocumbor) very much like whist, but said to be

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more difficult. Entertainments of all kinds are very acceptable at sea, and when the Brazilian passengers came forward with the suggestion that a grand concert should be given in honour of the captain, there was general rejoicing. The concert came off in due course, and there was also much rejoicing later. 'Honor to whom honor is due.' We had an Italian poet on board who managed to weave the names and attractions of all the ladies present into his speech, which took the form of a poem, but as he likened one lady to a full-blown rose, signs were not wanting of another storm.

EGG AND SPOON RACE.

POTATO RACE.

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Then we got into the south-east trade winds, which made things cooler and more pleasant, and it was not long before we came in sight of the island 'Fernando Noronha,' used as a penal settlement for the State of Pernambuco, also as a quarantine and cable station. It is about 300 miles north-east of Pernambuco. The island presents a very barren but still an imposing and pleasant appearance from the sea, and is of peculiar formation. Formerly there were 1600 convicts on the island. One, a political prisoner, endeavoured to escape in a small boat, but he was picked up by a New York steamer, landed at that port, re-arrested by the Brazilian Consul, and sent back to the island. The late Emperor, however, pardoned him, for his courage, after twelve months' imprisonment. By a recent State concession the island was granted to some private individuals for a coaling station, but so far nothing has been done in that direction, and as the facilities for coaling are not good, it does not appear likely that the scheme will be carried out. On the neighbouring island (Rata) a French firm is working,

TRIAL BY JURY.

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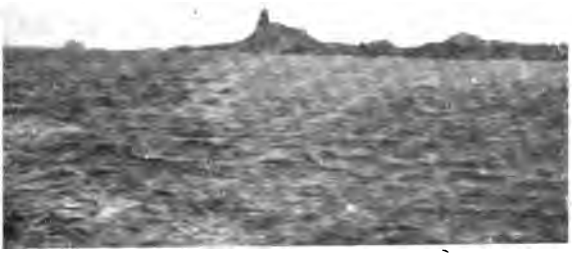
and shipments of phosphate have been made thence to Genoa and Nantes. The loading berth between the islands is said to be perfectly safe, and steamers can load at from 100 to 150 tons of phosphate per day.



FERNANDO NORONHA.

Shortly after passing the island we experienced heavy weather, but it certainly was productive of some amusement. There is, unfortunately, a tendency in recounting experiences of rough weather to use language of too explicit a character, but one of the many stories we heard will bear repetition. Children often pass very trite remarks, and have a happy fashion, due possibly to their limited vocabularies, of mixing up ideas quite foreign to each other, and of expressing them in quaint but telling ways. The youngster on this occasion was, with a number of the other passengers, thrown down on the floor of the saloon, and they were all so unwell as not to be able to get up again for some time. The gloom of the occasion was, however, relieved by the little one remarking, 'Oh, Mammie, do stop it

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walking.' She was only about four years old, and when the storm was over she remarked, 'It wouldn't stop walking although I holded the floor.'

On the morning of the fifth day after leaving St. Vincent the Brazilian coast was sighted. It was a beautiful morning, and, as usual off this coast, a high sea was running. At 2 p.m. we anchored off Pernambuco, and were charmed with the general appearance of the town, its red-roofed houses, the palm trees, lighthouse and fort; and the Olinda Hill in the distance formed a fitting background to the picture. We were welcomed by a large whale, which had evidently come into shallow water for a scrub down against the coral reefs which exist in this neighbourhood. There were quite a number of whales 'spouting' in our vicinity, so it was evident there was something of importance going on. As bearing upon this, and as illustrating the usefulness of bilge keels for purposes other than those named in Chapter II, the writer cannot do better than repeat a story told to him by the captain of the R.M.S. 'Orissa,' running in the South American service.

WHALE DISAPPEARING.

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'The whale,' he said, 'is not a fish, that is why 'he wears a horizontal tail,—he took to a sea life 'when land animals began to be too intelligent for 'him, and, like most sailors, has regretted it ever 'since. He cannot even sleep serenely now, owing 'to the traffic in ships, and is sometimes run into, 'when asleep, and cut in two. But he has other 'annoyances: insect pests tickle him, and barnacles 'make a home on a large part of his body. I have 'seen whales rolling on a sandy beach to displace 'these pests,—the rocks, as a rule, are too smooth 'with weed to be of any use. On one occasion, during 'a dense fog, off Santa Maria Island, in the Pacific, 'my ship was stopped some few miles off the shore 'waiting for a clearance. The coast being dangerous, 'an anchor was lowered down sixty fathoms under the 'ship for safety, and the ship was allowed to drift in 'the smooth water. About 6 a.m. I heard some 'heavy whale 'blows' or 'spouts' apparently close to. 'Shortly after a continued tremor of the ship caused 'me to seek the reason. It was too gentle for an 'earthquake, and was varied with bumps. Soon a 'huge whale, quite 150 feet, rose slowly out of the 'water, and floated alongside like a barque bottom 'up. It again descended, and the tremors recom-'menced. We noticed barnacles and shellfish coming 'to the surface, and these were actually scraped off the 'sides and underparts of the whale by means of the 'bilge keels. When one side of the whale was clean 'he went to the other side of the ship and started 'business there. Indeed the keels were the very

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'things required for the purpose. Not caring to 'have him so near, in case he should smash some of 'the boats, we pelted him with potatoes and coal. 'He took no notice of this until a piece of coal went 'into his mouth, and was swallowed in mistake. He 'then drenched us enough to frighten us, steamed 'off, and presently an immense tail in the air shewed 'he was disappearing for 'divers' reasons.'

We were also much interested, when approaching Pernambuco, by the 'catamarans,' which were leaving the port for sea. The 'catamaran' is a small boat, or rather raft, constructed by the tying of a few logs together. These logs are pointed at the forward end, and through the centre is inserted a centre board to steady the structure. There is also a mast with a three-cornered sail. The fishermen sit behind the mast to steer, and paddle when needed, and a large bag is fastened to the mast to hold the fish. It appeared to be extremely risky, as in most cases the water washed over the structure, and we expected momentarily to see the fishermen washed off, and caught by the sharks which abound in the locality.

CATAMARAN.

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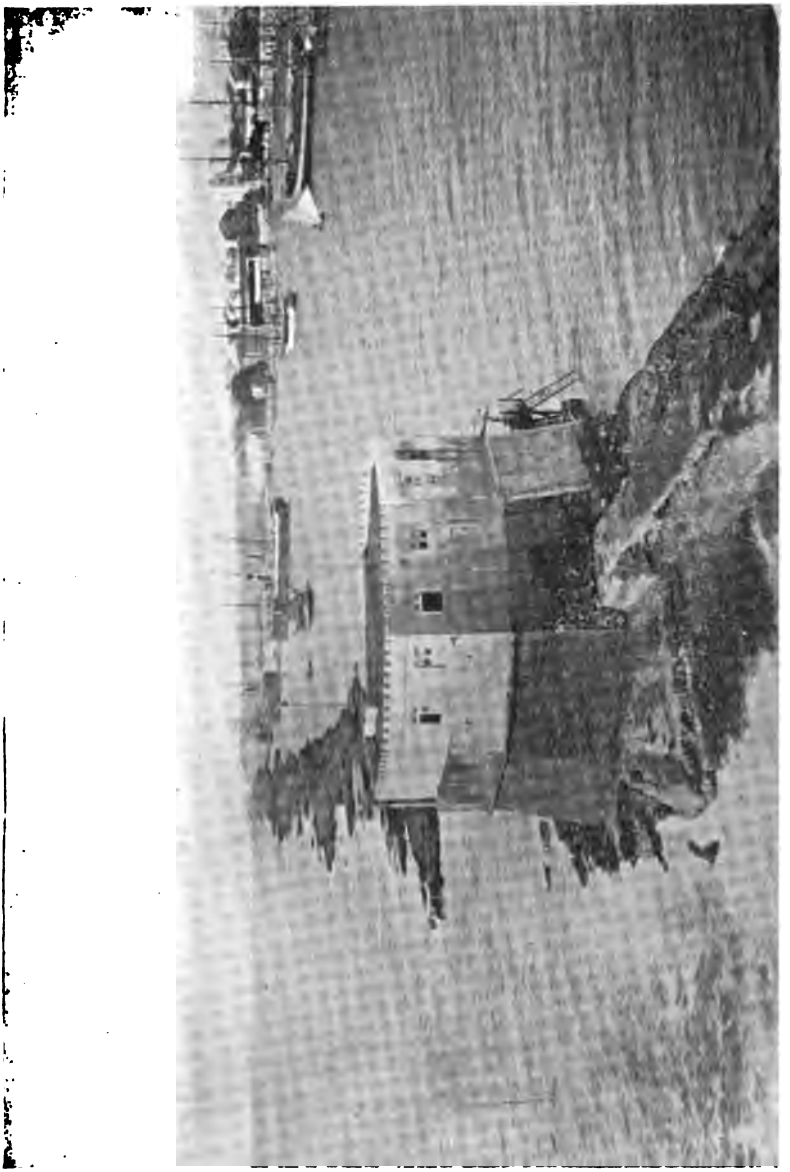

THE REEF—PERNAMBUCO.

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Fish at Pernambuco is very dear and very scarce. Dried cod is imported from Newfoundland. Warm waters are never good for fish, and the kinds to be had at the port are insipid, and very dear,—as much as 3s. 4d. per lb. being asked for common sorts.

We could see the ocean breaking in great rollers against the Recife (old name for Pernambuco—meaning Reef), which is of coral, and forms a natural harbour.

Pernambuco is not a nice port to land at from a large steamer outside the reef. Only small boats can

LANDING PASSENGERS IN A CHAIR.

go alongside owing to the heavy swell. At times passengers have to be lowered to the boats in a chair

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specially provided for the purpose. Fortunately we were able to use the ladder, but it meant jumping at the right time, and there were some very interesting snapshots taken during the process. We landed, after being passed at the Customs Depôt, which is in a hulk near

LINGUETA—PERNAMBUCO.

the quay, and after a small entertainment given gratuitously by a French artiste. It seems the lady in question had her jewellery with her, which she had declined to leave with the purser on account of the small charge made for safe custody on board. When her boat came alongside the Customs' hulk the officer in charge demanded her jewellery box, and insisted upon the payment of duty on the contents. As she merely meant to spend an hour on shore she did not quite see the force of this, and an exciting scene ensued, to the detriment of the French idiom. The language evidently was strong enough, or the jewellery of no value, as in the end she got away triumphantly. She created a further diversion

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on her return to the ship, and her ascent of the ladder was photographed by all the youngsters on board for transmission in due course to their fathers.

Inside the reef there is accommodation for the largest vessels afloat, but they cannot get inside, or into the harbour, if drawing more than 23 feet of water.

The coral reef borders the shore from Bahia to Maranham, a distance of nearly a thousand miles.

Pernambuco consists of three divisions, viz., Recife, San Antonio, and Boa Vista, the first two of which are situated on sand banks, and connected with each other by means of magnificent iron bridges There are no piers. The embankments of the River Capibaribe, which runs through the city and forms the inner harbour, have been reclaimed and built up. The depth of water in the inner harbour varies from 16 to 25 feet, and the rise and fall during spring tides may be taken to be from six to seven feet. Passengers are landed both inside and in the outer roads by means of boats.

NATIVE TOWN—PERNAMBUCO.

The principal exports of the port consist of sugar, cotton, cotton seed, hides, goat skins, and rum. The

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facilities for the discharge of cargo are very limited, there being only three cranes on the Custom-house wharf, viz., two small steam and one hand crane ; and in addition a few hand cranes on the quays. The imports consist of general and dry goods, iron work, groceries, cement, flour, codfish, &c., from England, Germany, France, and North America.

There is a lighthouse at the entrance to the inner harbour fitted with a revolving light, shewing red and white alternately every minute. This light can be seen for a distance of 18 to 20 miles. There are two other lights which serve to indicate the port, viz., the Olinda light, some five miles distant on Olinda Point, and Cape Santo Agostinho light, about 18 miles distant. In the roads there are buoys on what is known as the English Bank, at both the northern and southern extremities. A buoy also denotes the entrance bar to the harbour. There are about 180 lighters in the port, principally constructed of wood, the total tonnage of which is close upon 15,000 tons. Some of the lighters are covered. The lighters are principally owned by the Companhia S. Maritimos, Wilson, Sons & Co., Ltd., Moreira & Co., and J. A. Fonseca.

There are thirteen tug boats large and small, and of this number two (large steel 100 horse-power) are set aside for the towage of vessels and lighters in the roads.

Repairs to shipping are undertaken by several firms, but principally by Messrs. Wilson, Sons and Co., Limited, who have shops and all the needful plant wherewith to undertake marine repairs. There are no slipways available.

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The population of Pernambuco and suburbs may be reckoned at from 150,000 to 180,000; the foreigners being estimated as follows:—Portuguese, 15,000; Italians, 1,000; British, 400; Germans and Swiss, 100; French, 50.

There are several railways running from and into Pernambuco, viz., the Great Western of Brazil Railway (about 80 miles) in the direction of Parahyba, and through the principal cotton districts. The Central de Pernambuco Railway (70 miles), which runs due west

PALMS—PERNAMBUCO.

into the interior, and touches both sugar and cotton districts. The Recife and Sao Francisco Railway (80 miles), running south, and connecting with the Alagoas Railway (80 miles) to Maceio, altogether a distance of 200 miles from Pernambuco. This latter journey takes

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twelve hours, and there is one train a day each way. Many pleasant trips may thus be made from Pernambuco through fields of sugar cane and pineapples. Orchids, birds and plants of endless variety can be obtained in the interior, so that if one had the time to spare, there would be ample scope for an intellectual holiday.

This is a good port to start from for a trip on the Amazon, as there are lines of national steamers running to Manaos three times a month.

The several coasting lines running north and south from Pernambuco are :—

Cia Lloyd Brazileiro.
Cia Navegacao Costeira (Lage Irmaos).
Cia Pernambuco de Navegacao.
Cia Navegacao Gram Para.
Cia Navegacao do Para.

The ports of call embrace all ports in the north up to Manaos, on the River Amazonas, and in the south down to Porto Alegre, in the State of Rio Grande do Sul. We were only a short time in Pernambuco, most of which was occupied by business, so that we had not much opportunity to see the town, added to which the day of our visit was a 'Festa,' which means stoppage of all work in the port except under increased charges and by special permission. These 'Festas' in South America generally are a perfect nuisance and hindrance to trade, disorganising the labourers, delaying steamers and adding to the expenses of the port.

The streets of the town of Pernambuco are narrow, dirty and 'smelly,' but the houses look very gay, being

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painted principally in primary colours. There were many interesting figures in the streets, a great many negroes and negresses, but there appeared to be an entire absence of vehicles excepting mule trams. There is water all round, one part of the town being on an island, and it is complimented by the title of 'the Venice of South America.'

STREET IN PERNAMBUCO.

There are in the Brazils about 150 cotton factories, and the fabric naturally is made from the native article.

Gold, silver and paper money is issued, and the following may be taken as the approximate value :—

Gold—20 Milreis	(Rs. 20,000)	2s. 3d. per milreis.
10 ,,	(Rs. 10,000)	
5 ,,	(Rs. 5,000)	
2½ ,,	(Rs. 2,500)	
Silver—2,000 Reis		About 1s. 3d. per milreis.
1,000 ,,		
500 ,,		
200 ,,		
100 ,,		
50 ,,		

Paper of various denominations, about 1s. per milreis.

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The season of shipment for sugar from the Brazils is October to May—the chief months of shipment being January to March. Sugar is imported into Europe from South America in various kinds of packages, and this important article of commerce, as also coffee and india rubber, are dealt with more fully in the following chapter. Brazil is the most extensive State in South America, and was discovered by a Portuguese navigator, Pedro Alvarez Cabral, in the year 1500. The Republic was founded on the 15th November, 1889, by a bloodless revolution, which drove Dom Pedro from the throne—an act which we believe most Brazilians have regretted ever since. Brazil is 2,600 miles from north to south, and 2,500 miles from east to west, and has a coast line on the Atlantic of 3,700 miles. It contains an area of 3,218,166 square miles, and a population of about 18,000,000. There are 20 states, 16 of which lie along the coast and four in the interior. There are 42 ports, the principal being Para, Maceio, Pernambuco, Bahia, Rio de Janeiro and Santos. With Pernambuco we have already dealt, and we shall treat later of Bahia, Rio de Janeiro and Santos, all of which ports the writer visited. It was a matter of regret that our business did not admit of an inspection of ports north of Pernambuco, and also of a trip up the Amazon River. We heard, however, from travellers who joined our

BRAZILIAN PRESIDENT.
(Dr. Campos Salles.)
1902.

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steamer, something of the vast regions in the north awaiting development, though the pioneers will have to be of a very hardy character to stand the trying climate, and to combat the many difficulties imposed by hostile Indian tribes, of which there are many in the interior.

The rubber trade done through Para is one of very great importance, and capable of much development. Rubber from this district is looked upon by the trade as inferior to none in the world, though collectors up river have to be on their guard against the malpractices of the natives in the matter of weight. Stones and other make-weights are inserted, and to be on the safe side the rubber should be cut through before being accepted. The rubber industry is one of continual growing importance, as new markets are constantly opening up, and rubber is being used for purposes to-day which our forefathers never dreamed of. The Red Cross and Booth lines form the British connection with the Amazon, and there are small steamers plying up that river and its tributaries for more than 2,000 miles. The steamers of the lines referred to are able to steam up river as far as Iquitos.

The natural resources of the Brazilian States are enormous, but, like other South American Republics, the great want is population. There are about six souls to each square mile in the Brazils, and as the population centres in the larger towns, the outlying districts are practically untouched. A more progressive movement has prevailed in the southern coffee districts, and in the neighbourhood of São Paulo considerable efforts have from time to time been made to

NOTE.—The Hamburg America Line also now serve the Amazon.

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induce immigration. Further south still, around the provinces of Santa Catharina and Rio Grande, Germans have commenced to operate and ship their produce through Santos and Porto Alegré.

The mineral resources of the country, including gold, silver, and iron, which are considerable, have scarcely been touched; but Brazilian diamonds and topazes, and other precious stones are well known throughout the world. Vast forests of mahogany and other valuable timber abound, and wait only for enterprise to exploit them; enterprise which most assuredly will be followed by success.

Our North American cousins, who bid fair to capture the steam and other trades of the world, had to my knowledge a representative exploring in the rubber districts bordering on the Andes, and within easy distance of the great Oroya Railroad, the idea being to convey the rubber to Callao, on the Pacific Ocean, and ship thence to San Francisco. We shall have something more to say respecting the railway alluded to when we travel by it later.

Meantime what we say to the Brazilian Republic, as to all other South American Republics, is—put your immigration schemes on a business basis. Not only offer inducement to the immigrant, but see when he arrives that he gets all that is promised, and something more to encourage him to bring out his friends and relations. Make your contracts direct with the steamship lines, and pay them for the conveyance of the immigrants on embarkation, as by this means a cheaper rate can be had, and further, give the steamers

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every facility in the way of cheap dues, if not entire exemption, and do not hamper their working and increase their expenditure by any ridiculous restrictions as to overtime, working on 'Festas,' or by quarantine restrictions, which drive the public and commerce from your doors.

A Government can, roundly stated, always protect itself, but it must—to speak in general terms and without reflection upon any Government—be large-minded, open-handed, exact in its financial operations, and truthful in all its dealings, if it is to encourage outside business and internal development.

The absurd law which ties the coasting trade of the Brazils to local enterprise in the matter of steamers hampers, as it must hinder in every country where such a law exists, the natural instinct to development, and imposes on the Brazilian subjects services inadequate to the requirements of the Republic, and rates inimical to business. What would the Republics on the western shores of South America have done had it not been for their wise policy of allowing steamers from every part of the globe to ply along their shores, and bring wealth and advancement within the reach of all?

The valleys of the Brazils may be filled with sugar, coffee, cotton, cocoa, tobacco, india rubber, and its fields with maize, beans, wheat and other cereals, but what good results from all this dormant wealth if the policy actuating the statesmanship of the country be narrow, unprogressive, and wanting in that spirit which would wake to life the sleeping giants of activity of a land flowing with more than the proverbial 'milk and honey'?

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Map shewing the approximate extent

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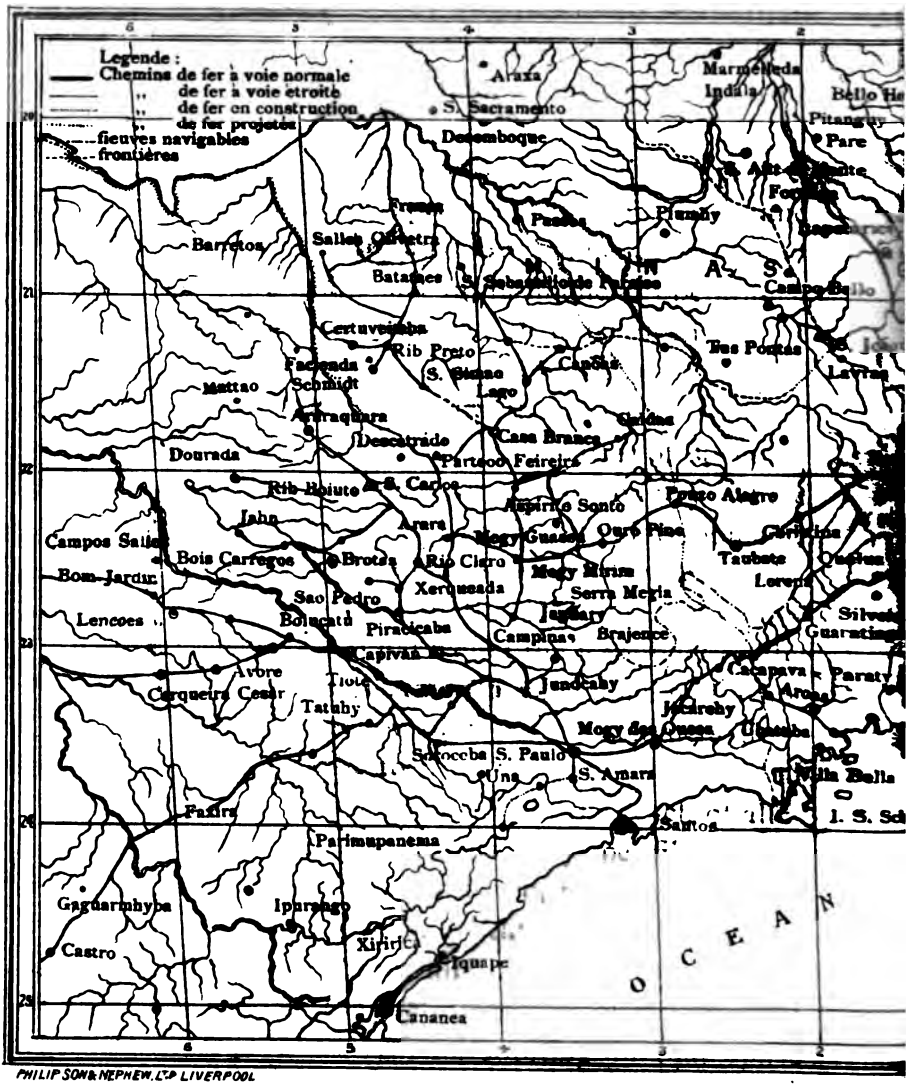
Map shewing the approximate extent



PHILIP SON & NEPHEW, LTD LIVERPOOL

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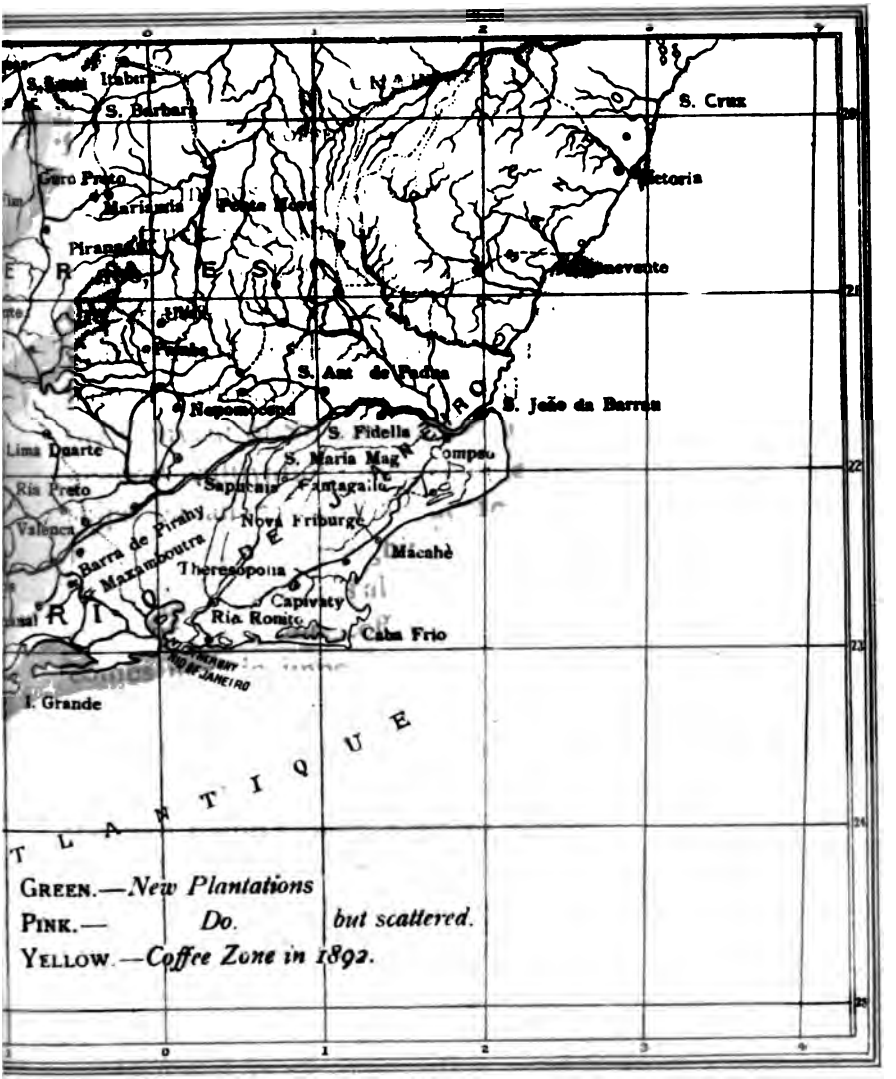
ıe Brazilian Coffee Plantations, 1901.



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CHAPTER VI.

COFFEE. SUGAR. INDIA RUBBER.

IT is impossible to visit the Brazils without being struck with the importance to the country of the coffee, sugar, and india rubber industries. Brazil is the greatest coffee-producing country in the world. Coffee was first introduced there by a Franciscan monk named Vellosa, who cultivated the plant in a garden of the Convent of St. Antonio, near Rio de Janeiro. The general cultivation was commenced in 1774 as the ships on an average about 10,000,000 bags of coffee per annum, each weighing say 130 lbs.* The sterling value of this coffee is about £15,500,000. The principal shipping port for coffee is Santos,—Rio de Janeiro comes next in importance.

As an indication of the extent to which coffee cultivation is carried on in Brazil, we give the following extract from a report of the Secretary of Agriculture of the São Paulo Government:—

'There are in São Paulo 15,075 plantations, of 'which 11,234 have from 50,000 trees downwards; '1,844 possess from 50,000 to 100,000; 999 between '100,000 and 200,000; 597 from 200,000 to 500,000 'trees. On these plantations 1,703 machines are to 'be found for cleaning coffee, 1,243 of which are moved 'by steam, and 460 by water. The registered mort-

*The Brazil coffee crop for the season 1906/7 was 19,000,000 bags.

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'gage debt on these plantations is computed at '240,000,000 milreis, say £8,000,000, at the exchange 'of 8d. per milreis.

'In Minas Geraes it is said there are 2,739 coffee 'plantations, of which 1,234 have less than 50,000 'coffee trees each, 844 with over 100,000 trees each, 'and 64 with over 500,000 trees each. Of these 'plantations 500 use water power to move machinery, 'and 1,243 use steam power.'

It was estimated a few years ago that there were 530,000,000 coffee trees flourishing in the Brazilian Empire.

The scale for valuation of coffee plantations, when offered for sale, is about 1 milreis per coffee plant.

The chief market for Brazilian coffee is New York. The coffee is shipped in jute bags, and is sold in the Brazils at so many milreis per arroba (32 lbs.), according to the ruling market price.

Of course every one knows what coffee is as an article of diet, and all can recognise it in the shops; but we would possibly not recognise it growing unless pointed out. The fruit of the coffee tree resembles a cherry in size and a plum in form. When the flesh is taken off a plum, a stone is revealed in the middle, which, when broken, reveals the seed, and very much the same thing happens if the fruit of the coffee plant is similarly dealt with, though the flesh is not as well flavoured as that of the plum. The centre of the fruit is not hard like a plum stone, but the seed is surrounded by a natural skin, or membrane, known as 'parchment,' and beneath this is a very delicate semi-transparent jacket,

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termed the 'silver skin.' Coffee is shipped in this skin and without it; when shipped in the skin, it is called 'Pergamino,' and when without 'Oro.' Inside the skin are usually two seeds, and these seeds are the coffee of commerce. There are, of course, machines for ridding the coffee of its outside coverings, and the processes are interesting. The coffee is then dried, and in some cases coloured artificially to meet the demands of different markets,—that for South Africa being tinted by a mixture of charcoal and whiting. It is then bagged and shipped to destination. The appearance of a coffee plantation in full bloom is simply charming. The trees, with their dark green leaves, appear to be bedecked with snow, and the air is laden with a sweet fragrance. The plantation is mostly divided into halves by the chief roadway, which is wide and straight and planted with fruit trees. A ditch, which runs parallel with the alley on either side, divides this chief way from the 32-feet wide coffee beds which extend at right angles from it, and from this ditch trenches two feet wide are extended, which carry off the collected water to the side canals. Each bed contains three to four rows of coffee plants,—each tree standing from 8 to 9 feet away from the next (an acre contains about 350 trees), and these are sheltered, by two rows of large knotty Erythrinen, from their two greatest enemies, viz., the sun and the north wind, both of which, are most felt during the blossom period. If this blossom endures through a damp temperature of from 75 to 85 degrees Fahr., followed by dry sunny weather, the wishes of the planter will be fulfilled, and he may

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reasonably expect to obtain from each full-grown tree (say six years old) 1½ lbs. of clean coffee on poor land, 3 lbs. on medium land, and 4½ lbs. on superior land. One man can comfortably look after two acres of ground, and also gather in the harvest. Berries are ready for picking when they assume a dark red colour, and the skins shrivel up. When the coffee plant reaches a height of from four to five feet, it is pruned for the convenience of gathering the crop. The cost of converting an acre of bushland into coffee beds ranges, according to the nature of the land, from £12 to £16.

When commencing a coffee plantation it is better to obtain young plants about two feet high and two years old from several other coffee beds, though one can commence simply by sowing the seed. The greatest care must be taken of the plants, and they must not be cut or placed nearer to each other than from five to eight feet. In the second year after transplantation the plants reach a considerable height, so that one can reasonably expect a small harvest in the third year. Corn and mandico are frequently grown between the rows till the fourth year. The duration of a coffee estate rarely exceeds 30 years, and if the soil be light, eight to ten years is generally the limit. The regions said to be best adapted for the cultivation of coffee are well watered mountain slopes at an elevation ranging from 1,000 to 4,000 feet above sea level, in latitudes lying between 15° North and 15° South, although coffee has been successfully cultivated from 25° North to 30° South of the Equator, in situations where the temperature does not fall beneath 55° Fahr.

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The principal sorts of coffee may be put under the three headings—'Levant,' 'East,' and 'West Indian.' According to the quality of the mass, one and the same kind may come under the following denominations: fine, fine medium, good medium, medium, small or low medium, and 'triage' (broken and damaged); fine ordinary, good ordinary, ordinary or entire ordinary. In every case one must be careful in purchasing that the beans recommend themselves by their hard, dry, fresh, smooth and weighty quality. They must be free from adulteration and impurities such as small stones and dust, and in the mass must possess no other smell than that which is customary. The colour, which not infrequently is artificially made as already indicated, cannot by itself be regarded as an infallible test.

The true home of coffee is said to be the highlands of Abyssinia, where still on the banks of the Blue Nile, to the North near Kaffa, it may be seen growing wild, and possibly the name 'coffee' finds its origin in Kaffa. In 1534 it was known in Constantinople: in 1645 it was introduced into Italy, and in 1652 the first coffee house was opened in London. It was grown in Arabia in the fifteenth century, in 1690 in Java, and in 1718 in Jamaica and Martinique. Hewitt tells us that an Eastern legend ascribes the discovery of the berry to a Dervish named Hadji Omer, who in the year 1285, being driven out of Mocha, was induced in the extremity of hunger to roast the berries which grew near his hiding place. He ate them as the only

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means of sustaining life, and steeping the roasted berries in water to quench his thirst, he thus discovered their agreeable qualities, and also that the infusion was nearly equal to solid food. His persecutors, who had intended that he should die of starvation, regarded his preservation as a miracle, and he was accordingly transmuted into a saint.

Amongst the very best kinds of coffee, Mocha (after the town of that name) takes easily the first rank, not so much on account of its appearance as of its fine flavour. It does not follow that all Mocha coffee is of equal good quality, as the position of the plantation and numerous other incidents, including the voyage to Europe, may affect it prejudicially, especially in the matter of aroma, and it must not be forgotten that coffee from other countries (India and South America) is frequently sold under the name of Mocha. The excellence of coffee depends in no little degree upon the care and skill exercised in roasting it, and when prepared for drinking, upon the knowledge and care shewn in its preparation. It should never be boiled, as the aromatic oil which produces the flavour and strength is lost in boiling.

Coffee was first known by the name of Kauhi, an orthography which reminds me of a story concerning a certain town councillor, who, when preparing a bill of fare for a public breakfast, contrived to spell coffee without employing a single letter occurring in that word,—thus, 'kawphy.' Coffee was regarded as an intoxicant by the ancients, and the Koran forbade its use, and it is no doubt slightly inebriating, but as a brain

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stimulant it is almost unequalled. Sydney Smith said: 'If you want to improve your understanding, drink coffee.' Pope was a confirmed devotee, and would call his servants at all hours of the night to prepare coffee for him. He used to grind and prepare his own. This is how he describes what he did :—

'For lo, the board with cup and spoon is crowned,
'The berries crackle and the mill turns round.
'On shining altars of Japan they raise
'The silver lamp, the fiery spirits blaze.
'From silver spouts the grateful liquors glide,
'White China's earth receives the smoking tide.
'At once they gratify their sense and taste,
'And frequent cups prolong the rich repast.
'Coffee which makes the politician wise,
'And see through all things with his half-shut eyes.'

A pinch of salt is frequently added by South Americans to their coffee, and with good result, as any harshness which may exist is thereby removed.

Anyone proceeding to South America for the purpose of cultivating coffee would be well advised to obtain a copy of C. G. Warnford Loch's work, entitled 'Coffee—its Culture and Commerce.' 'The points,' he says, 'which determine the value of a plot for coffee culture are (1) elevation, (2) aspect, (3) shelter from wind, (4) shelter from wash, (5) temperature, (6) rainfall, (7) proximity to a river, (8) character and richness of the soil. Flat land must be avoided, and a wet soil is fatal to coffee.' He draws attention, also, to the maladies to which the coffee shrub is liable, the principal of which are leaf blight, fly, borer (worm), bug and canker ; and he explains in detail the operations

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needed to prepare the coffee for market, such as pulping, fermenting to remove saccharine matter without which the beans would not dry, drying in the sun, lulling or pecking (this operation consists in the removal of the parchment and the silver skin). After this, comes the further process of drying and then 'sizing,' *i.e.*, separating into various sizes for the market. After the planter has prepared his coffee he sends it to an agent, who sells it to a dealer. The latter bags and exports it through a broker. Then comes the cost of transport and various other charges and profits before the coffee comes into the hands of the consumer. Coffee is now about 1s. 8d. per lb to the consumer in England, so that if we were to deduct the expenses of all the middlemen employed we should find that the planter's share is not a large one, and we should see further how much the public would gain if so many middlemen were not employed. In this age of large combinations, and the merging of numerous interests into one great corporation, it would not surprise the writer if one day the general public were startled by an announcement of the formation of a great Brazilian Coffee Trust. Competition with other markets naturally levels the price, and possibly in the present day there is, if anything, over-production, which also tends in the same direction.

Coffee requires careful stowage on board ship, as it readily imbibes exhalations from other bodies. It should never be placed near sugar or salt. Freight is charged at so much per ton weight for shell and for clean coffee, and not on the measurement.

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Import Duties on Coffee.

The following table shows the approximate Import Duties levied on Raw Coffee in the principal countries of the World.

Raw Coffee.	Rates of Duty.	English Equivalents.
	frs. cts.	£ s. d.
France — General tariff	100 kilogs. 300 00	6 1 11 cwt.	13·06 lb.
France — Minimum tariff	,, 156 00	3 3 5 ,,	6·80 ,,
France — ,, by treaty	,, 136 00	2 15 3 ,,	5·92 ,,
Imported from European entrepôts, a surtax of	,, 3 60	0 1 5⅜ ,,	0·16 ,,
	rbls. cop.	
Russia	pood 5 85	1 18 5 ,,	4·11 ,,
	kron. ore.	
Sweden	kilog. 0 12	0 6 9 ,,	0·72 ,,
Norway — Maximum tariff	,, 0 50	1 8 3 ,,	3·02 ,,
Norway — Minimum tariff	,, 0 30	0 16 10 ,,	1·80 ,,
Denmark	pund 0 12½	0 14 1 ,,	1·51 ,,
	mks. pf.	
Germany	100 kilogs. 40 00	1 0 4 ,,	2·18 ,,
Holland	Free	Free.
	frs. cts.	
Belgium	100 kilogs. 10 00	0 4 0⅜ ,,	0·43 ,,
	reis.	
Portugal	kilog. 180	2 11 2 ,,	4·41 ,,
	pes. cts.	
Spain	100 kilogs. 140 00	2 16 11 ,,	6·09 ,,
Additional duty when imported from, or transhipped in a European port	,, 4 50	0 1 10 ,,	0·19 ,,
	lire. cts.	
Italy	,, 150 00	3 1 0 ,,	6·53 ,,
Special duty on Brazilian Coffee	,, 130 00	2 12 10 ,,	5·56 ,,
	fls. kr.	
Austria-Hungary — Imported by Sea	,, 37 00	1 17 7 ,,	4·02 ,,
Austria-Hungary — Imported by land	,, 40 00	2 0 8 ,,	4·36 ,,
	frs. cts.	
Switzerland	,, 3 50	0 1 5 ,,	0·15 ,,
United States	Free.	Free.
United Kingdom	... ...	0 14 0 ,,	1·50 ,,

Australasia.

	per cwt.	per lb.
New South Wales	Free	
Victoria	Free	
South Australia	£1 8 0	3d.
Northern Territory	1 8 0	3d.
Western Australia	Free	
Queensland	1 17 4	4d.
Tasmania	0 18 8	2d.
New Zealand	0 18 8	2d.

Canada—Direct free; otherwise 10 per cent. ad. val.

When coffee is imported direct to Canada from the country of production, or is purchased in bond in the United Kingdom, the article is admitted free of duty, otherwise 10 per cent. ad valorem is levied.

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Sugar.

We were not able in the time at our disposal to visit a sugar estate in the Brazils, though we did so in Peru and in Central America, and we also inspected refineries in Rosario de Santa Fé, and in the province of Lima. The industry, and the mode of prosecuting it, is, however, the same in the Brazils, though the system of packing for export varies somewhat. Sugar is exported from the several countries in either hogsheads, tierces, barrels, bags, baskets, or mats, and naturally the freight and charges vary according to the package and the nature of the sugar, whether wet or dry, grainy, syrupy or concrete. The freight on cane sugar, owing in a measure to the competition with beet sugar, rules very low, that from the Brazils to a United Kingdom port being (as I write) 12s. 6d. per ton. From 200,000 to 300,000 tons of Sugar per year is produced in the Brazils, according to favourable or unfavourable climatic conditions. Of this about 100,000 to 150,000 tons is exported to the United States, 20,000 to 25,000 tons to the United Kingdom, and the balance provides for home consumption and for small exports to Spain and Portugal. The Bounty Question largely determines the distribution of the Brazil crop. Beet sugar exported to the United States is handicapped to the extent of the bounty allowed on it in the country in which it was grown, an *extra* duty equivalent to the bounty being imposed in America on all bounty-fed sugar. Hence the reason for such a large proportion of Brazil sugar finding its way to America. The Brazil sugar imported into the United

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Kingdom is principally of a low testing quality. It is largely sold to breweries and to refiners who do not use beet sugar.

The Brazil Sugar Belt is a strip of the coastline between 3 to 10 degrees south of the equator, and the principal ports of shipment are Paraiba (Cabadello), Pernambuco, Maceio, and Bahia, the sugar being shipped in bags.

The process of refining the sugar has altered the conditions of shipment, as formerly sugar was so heavy that a vessel could not take a full cargo, *i.e.*, could not be properly filled. Sugar requires very careful stowage on account of the drainage. It should consequently be stowed in the bottom of the ship, and brown sugar should not be stowed on top of white. As sugar ferments very easily, good ventilation is also needed.

Sugar is one of the most widely-spread substances in the kingdom of plants, and may naturally be divided into two kinds, viz., grape (largely used for making glucose, which is much in demand by brewers), and cane sugar, the latter being more properly the stalk of the plant, and the former the fruit. What is known as cane sugar is found in the sap of the birch, palm and nut trees, in maize and sugar cane—grape sugar in the sweet sap of nearly all fruits grown in temperate climates, and what is known as beet sugar properly comes under the denomination of 'grape.' The sugar cane is a perennial plant of the family of grasses *Saccharum Officinarum,* of which many varieties are cultivated. It is grown largely in North, Central and South America, the West Indies, in Natal, Mauritius

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and Australia, in Fiji and in India, Java, Philippines, and the East generally, including Egypt. In appearance it is like a gigantic reed, the stalk of which is from one to two inches thick, and grows to a height of 120 to 160 and even 200 inches, with numerous knots, and a cluster of blooms at the top. The canes in the plantantions inspected by the writer were not more than from 60 to 100 inches high, but this may have arisen from the fact that the plants were not young, and the ground not sufficiently marshy.

The three principal kinds of cane are :—

CREOLE, having dark green leaves and thin knotty canes. This kind reached South America from India through the Canary Islands and the Antilles.

BATAVIA, or striped sugar cane, with thick purple striped foliage, originated in Java, where it is used to a great extent for making rum ; and lastly,

OTAHEITE, which grows the strongest, contains the most sap, and is the best of all with the greatest produce. It has spread all over the West Indies and South America.

In the West Indies planting takes place between June and October, and the Creole canes are ready for cutting about the beginning of January in the second following year. Twenty tons per acre is said to be a good average crop.

The sugar cane is originally a marsh plant, and requires a hot tropical climate and a very strong damp earth. Its propagation is effected by means of shoots about two feet long, with stalks regularly covered with buds, and which require from 9 to 16 months to ripen.

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These are planted in rows three feet apart, and at intervals of two feet from shoot to shoot. Many colonists cut the reed off before, but the most after, the blossoming period, and they regulate the cuttings in such wise that the different fields ripen one after the other, and not altogether. The value of the cane in sugar depends upon the culture and climate, but the general percentage is about 18.

The custom of sweetening food is much older than the knowledge of sugar, and in the olden times honey took its place, yet the cane from which a vegetable honey exuded was known as early as the first century after Christ. In the twelfth century the culture of the sugar cane came from Asia to Cyprus, and at the commencement of the 16th century it was planted in the West Indies. The art of extracting syrup from the cane has been understood since the middle of the 15th century, but the art of refining it was discovered much later by a Venetian. In the year 1597 there was a sugar refinery in Dresden, and for the purpose of refining the syrup, lime water and the white of egg were used ; sugar candy was also known at this period. Up to the end of the 17th century sugar was so dear that syrup and honey were chiefly used. The use of sugar, however, increased side by side with the ever-increasing consumption of coffee and tea.

After sugar had been known for several centuries, and was still refined only in the north of Europe, a German chemist, Magraf by name, discovered sugar in several roots, especially in beet. Forty-nine years later sugar was actually produced from beet ; but at

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first, through the continental embargoes and the protective duties, the art of extracting sugar from beet was much hindered, and only survived through the arduous exertions of those engaged in it. The formation of sugar in beet seems to be mainly due to the leaves, as it has in practice been found that the quality of beet for sugar manufacture improves with the number and weight of its leaves. Beet, it is said, can be grown with satisfactory results in all land found above latitude 38°. The best known sugar beets and their yield, I understand, are as follows :—

White Silesian -	-	yields about	16	per cent.	of sugar.
Magdeburg -	-	,,	14	,,	,,
Imperiale -	-	,,	13½	,,	,,
Breslau Electorale	-	,,	13	,,	,,
Improved Deprez	-	,,	16	,,	,,

The best growing countries are Germany, Austria, Holland, France, Belgium, Italy, Spain, Russia, and North America. A great impetus to beet growing for sugar manufacture is afforded by the bounties given by the governments of the countries named, North America excepted, on all sugar exported from the several countries,—bounties which enable the producer, in some cases, to dispose of his sugar in England at a sum actually £1 per ton less than the cost of production, and yet leave 10s. per ton profit. Beet sugar is now, by the improvement in the processes of culture and refining, produced of equal quality with cane sugar ; but the actual cost of cane sugar is less than beet, so that, were it not for the bounty system, the sugar which costs the least to produce would be used in the United Kingdom,

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and British dependencies, largely relying upon the production of sugar for their existence, would not be suffered to fall into decay, as the West Indies apparently are now doing. The British Government in 1902, we are glad to observe, decided to help the West Indian sugar planters to the extent of £250,000. Of course it might be argued that we in the United Kingdom get our sugar cheaper than we would otherwise do, but in looking at the question from this standpoint, we must not forget that charity begins at home. The countries exporting beet have to pay considerably more per lb. for their own sugar than we do in order to support the industry, and our own sugar refineries have had to be closed, and our dependencies are being undoubtedly weakened by the continental bounty system. At one time the bounties were such in France that sugar could be sent to England and re-shipped to France and sold there for less than the same sugar which had not been exported, and still leave a fair profit. A surtax would, however, now be charged on sugar imported to England and reshipped to France, which would make the reshipment prohibitive. There is nothing sacrosanct about free trade. It cannot be set up as a fetish ; and our fiscal system must be dealt with from a purely business standpoint, and brought up to date. Free trade has had its day. No doubt many advantages have accrued from the system in the past, when competing nations were not educated up to the trade standard they have now arrived at, and had not studied how to circumvent the many weaknesses in our system. We are losing our ships fast through the want of a

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broad, enlightened, progressive policy in the administration, and we shall lose some of our colonies and prestige if we do not wake up to a sense of our own national requirements, and to the fact that protection should precede pusillanimity. Generosity to others, in the advancing spirit of the age, may, like the sword of Goliath, be used for our own decapitation. Free trade is not 'vested with the abstract sanctity of a religious dogma,' and signs are, we are glad to observe, not wanting that our country is awakening to the fact. Let us hope that the remedy may not come too late. Something has, however, been done for India as it now imposes an extra duty on sugar, bounty fed, to the extent of the bounty given. This strengthens the position of English refiners, and enables them to compete successfully with their continental rivals.

It has been affirmed that continental countries do not give bounties, and whilst this may literally be the fact, so far as the name 'bounty' is concerned, in actual practice a bounty is given. The duties are levied on the beet as it goes into the refinery on the amount of sugar it is estimated it will produce, and when the sugar is exported a drawback is received as if duty had been paid upon the whole quantity. The beet may be only lightly pressed when first put through, and may consequently be put through a second time. I have seen this operation performed on cane with very good results.

The House of Commons some time ago, when this question was inquired into, reported that the most effectual mode of stopping bounties was the

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manufacturing and refining of sugar under excise supervision. This naturally means that duty will be paid on all sugar consumed either on issuing from the factory, or on import. There must be a regular and systematic conference of nations, and an import duty should be levied against those nations which will not conform to the decisions arrived at for the general good. A sugar bounties convention was recently agreed to in Brussels, but will not take effect until September, 1903. If the convention comes into operation it will possibly solve the West Indian problem. The present prices for sugar, the committee states, are leaving a loss of from £2 to £3 per ton on sugar produced, and they affirm that unless the British Government can see its way to relieve the strain by at least £2 per ton, there will be a material reduction in the cultivation of sugar in the West Indies. The committee adds: 'We believe that these Colonies are at the breaking point, and that immediate relief is absolutely necessary to prevent what we believe would be a serious calamity.'

In 1906 the imports of refined sugar were 18,107,832 cwts, and of unrefined 15,248,912 cwts; 11,088,661 cwts beet sugar, and 1,962,817 cwts from British possessions. In 1897 the imports from British possessions were 1,679,113 cwts.

West India sugar is shipped from March to end of August, and the packages may be either hogsheads, tierces, barrels, trusses, casks or boxes.

South America. Brazil, October to May, though January to March are the principal months.

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East Indies. The season varies, but December to February are the principal months. Shipped in mats, bags, double gunnies, double mats, and baskets.

Europe. (Beet) October to March in bags and casks.

It is not always necessary to have a crushing and/or refining factory on the plantation, as in Peru we found there was a central factory to which the sugar grown on the surrounding 'haciendas' was sent, and payment was made in kind for the crushing, etc., *i.e.*, a certain percentage of the sugar so manufactured is claimed by the owners of the refinery. Each hacienda sends a representative to the factory, who remains there to watch the process in the interest of the grower. In the factory the operation of crushing is first performed, and the juice is then led to a trough, whence it is carried by pipes to a number of iron vessels, where the liquid is clarified. The boiling-down process follows, in a range of three to five copper pans heated by direct fire, and in which the sugar is concentrated down to the crystallising point. The skimming from these pans is collected, and is used for making aguadiente or rum. The molasses are drained away into tanks. The cane, after being crushed, was placed in the sun to dry, and then used as fuel to work the machinery. This plantation and refinery was chiefly run by Chinese and Japanese labour, and as the two races have a great antipathy to each other, they had each their separate villages on the estate, with joss house, shops, etc. The shops or stores belong to the Company owning the

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plantation, etc., and all the employés have to purchase their requirements from them, their wages for the most part being paid in fichas (answering to our coins), and which are as a rule only accepted on the hacienda or oficina in which they are issued. A separate account is kept in regard to the several stores which are found to be very remunerative.

We were much interested also in the refining process which we saw in Rosario, and the particular establishment we visited holds the monopoly from the Government of the whole province of Santa Fé for crystals. We proceeded to the top of the establishment first, where the raw sugar is melted and passes by natural gravitation to the next floor, where it is strained through cotton bags. After this, it passes through beds of animal charcoal for decolorisation. The sugar is then passed into tanks and boiled to grain. Most modern machinery is employed, and the sugar produced is excellent.

The great question as concerns coffee is how to find fresh markets and uses to keep pace with the production, but sugar, in addition to being an article of diet, is used largely in manufactures, such as the distilling of wine, in jam, beer, soap, aerated waters, drugs, varnish, condensed milk, crystallised fruits, malt extracts, etc.

Import duties on sugar which have been charged since the 19th of April, 1901, are :—

Sugar of a polarisation exceeding 98° per cwt. 4s. 2d.

Sugar of a polarisation not exceeding 76° per cwt. 2s.

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and intermediate duties varying between 4s. 2d. and 2s. on sugar of a polarisation not exceeding 98° and exceeding 76°, in accordance with a fixed table published by the Customs. Sugar is tested at the following ports, viz.—London, Southampton, Bristol, Liverpool, Greenock, Glasgow, Grangemouth, Leith and Hull. Sugar may be shipped from bond as ships' stores under the usual regulations, but not exceeding four ounces per day for each person on board. The like quantity is applicable also to condensed milk and preserves.

Brazil sugar comes under the following denominations on the market, viz.:—

Bahia.

Nazareths.

Pernams, Maceio and Rio Grande.
- Centrifugals.
- Good refining
- Fair.
- Low.

Parahiba.
- Good Brutos.
- Rappadura

Ceara and Maranham.
- Good refining.
- Fair.

Peruvian is sold as—
- Crystals.
- Good grainy.
- Low grainy and semi-grainy.
- Syrups, fair to fine.
- ,, low to medium.
- Chancaca and concrete.

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The polarisation test, indicating the percentage of crystallisable sugar, regulates the price in conjunction with the supply and demand, as also the anticipated production for the oncoming season.

India Rubber.

In Chapter V. some reference is made to the continual fresh markets springing up for rubber, and it will be interesting to those who have nothing directly to do with ships to know to what uses rubber is put on board. In the engine department there are rubber reducing valve discs, sheets, strips, best oil resisting valves for air pumps, valves for circulating pumps and refrigerator compressors, rubber sheets with cloth and brass wire gauze insertion, rubber joints and packing, and hose for steam suction and delivery purposes. Then for the deck department there are rubber and canvas delivery hose, stair treads, mats, rubber tiling, squeegee strips, and foot warmers for the passengers.

The use of rubber also for cycles, motor cars, railway and electrical purposes, and carriages has given a great impetus to the trade, and is resulting in the formation of companies for the production of rubber, the protection of the trees, and the creation of fresh plantations. Formerly, when the uses to which rubber could be put were only very partially known, the natives, when the trade commenced to be opened out, very improperly cut down the trees in order to get a large quantity of the milky juice forming the rubber with the least trouble. This was a most iniquitous method, but happily, with extended knowledge, it is

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rapidly dying out. The trees from which india rubber is obtained are of the bread-fruit order. Those indigent to South America and Guiana are principally of the class *Siphonia Elastica (Hevea Caoutchouc)*, those pertaining to Sumatra and Java *Naccela Elastica*, those belonging to the East Indies *Ficus Elastica*, and *Artocarpus Incisa* in the West Indies. A large quantity of rubber also comes from the West Coast of Africa, Central America, and some from Ecuador, and it is obtained from various kinds of trees and shrubs. It is readily discovered by rubbing the milk or juice between the fingers, and, if this coagulates into an elastic fibre, you may be certain that it contains globules of rubber. It is collected in South America chiefly by Indians in the service of planters, each man being supposed to attend to 100 trees, and he is paid, in order to ensure his constant labour, according to the quantity of rubber brought in.

August to February being what is called the dry season, are the principal months for collecting the rubber. Incisions are made into the trees, some near the base, where the rubber is trained into small clay dishes, and some four or five feet from the ground, when the juice is allowed to run down and dry on the bark of the tree. About one-third of the juice is pure india rubber, and a tree will yield about two ounces of juice per day. The juice is white and tasteless, and has a not unpleasant smell, with which, no doubt, all are in these days familiar. The old-fashioned method of reducing the juice to rubber, and which is still to some extent followed, was to dip a clay mould, in the shape

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of a pear, into the juice, dry the coating so obtained over a specially prepared fire of palm nuts, &c., and to keep on repeating the process of dipping and drying until a strong covering is formed over the mould. The clay is then washed out, and the form well known in trade as the bottle is the result. Sometimes this is suspended in a chimney to ensure complete drying, and this imparts also the dark colour with which we are familiar. This colour, however, is only a covering, as if one of the 'bottles' be cut it will show a perfect white in the centre. India rubber is also made in the form of cakes two feet long by one foot wide and two to three inches thick; and it also comes into the market as balls or negroheads, scraps and biscuits. Other and improved methods of extracting the rubber are now followed, and machinery is brought into requisition.

The chief property of rubber is its elasticity, and it is much prized on this account, and also for its flexibility and the strength to which it will hold to other bodies; and likewise to its own cut pieces if these are fresh. When cold it is hard and stiff, when warm soft and supple, and it melts in heat. It is also impenetrable by gases and fluids. It is insoluble in water, but is readily damaged by oil, which first softens it, then it hardens and loses its virtue by becoming hard and brittle.

Rubber may readily be cultivated over the entire tropical zone, but it requires a moist and steamy atmosphere, and flourishes by the side of rivers and in a temperature ranging from 89 to 94 at noon, and is never cooler than 73 at night. The extensive valleys

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of the Amazon and its tributaries, covering many thousands of miles, afford a splendid area for the cultivation of rubber trees, and there is a vast future in store for the Brazils, even had that naturally wealthy land nothing else to depend upon.

Unfortunately we had no time in our journey to visit any rubber plantations, but we heard much respecting the industry from explorers and travellers, and it was not difficult to conclude that its future will be a rapidly progressive one.

Rubber, or 'elastic gum' as it was first called, was discovered and brought to Europe in 1735 as a curiosity. Some travellers found the natives of the Brazils wearing shoes, and using utensils, made with rubber, and also playing with rubber balls. It soon came into use for rubbing out blacklead pencil marks, and so got its name of rubber. It is also known to commerce as 'caoutchouc,' which is the French name, and is derived from a Central American word, 'cachucha,' the name of a dance.

The value of rubber depends firstly upon its elasticity, secondly its light colour, and thirdly the absence of foreign substances, such as bark, stones, water, &c. The best markets are Great Britain, Germany, France, and the United States.

American rubber is known as Para, Ceara, Pernambuco, Maranhao, Cartagena, Guayaquil, West Indian, Guatemala and San Salvador. African: Madagascar, Mozambique, Angola, Benguela, Congo, and Gaboon. Asiatic or East Indian: Assam, Borneo, Rangoon, Singapore, Penang, and Java.

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Para rubber, as previously stated, is considered the best, Ceara comes next, and all American qualities are fair. East Indian rubber is also a good quality, but is much adulterated.

The export trade in rubber manufactures from Great Britain is enormous, and the processes of manufacture of the several articles most interesting and instructive.

The quality ot rubber is judged and its value fixed in the saleroom, when it comes from some new source; however, after it is listed, it rises and falls with the market fluctuations, subject to sample being over or under the standard, there not being the same uniformity about the lower grades as there is with Para rubber. Most of the African grades are gone over before being shipped, and all not up to standard are thrown aside, and sold at a lower price as rejections. The rubber, which mostly arrives in cases from South America, and in casks and bags from Africa, is first taken to tanks of warm water, where it is heated, and then cut up and placed between the rollers of a washing machine, with a stream of water pouring over it, which removes all foreign matter such as sand, clay and bark. It is then rolled into thin sheets, which are then taken to the drying stove, where they are kept for about a week to ten days. The exposure to the atmosphere during the process of drying changes the colour from white to dark brown. After the rubber is taken from the stove it is weighed off into batches and placed in the mixing mill, between rollers heated with steam, which

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considerably softens it, and allows the compounds to be added.

The compounds are various, but the one that is absolutely essential is sulphur, which, when heated with the rubber to a temperature equal to thirty or forty pounds steam pressure, causes the chemical change known as vulcanising, upon which the usefulness of rubber for mechanical purposes depends. Other chemicals commonly added are zinc oxide, lead oxide and whiting. Zinc oxide, which is the principal ingredient specified by the Admiralty, enables the rubber to be vulcanised with rather less sulphur, which is a considerable advantage, as an excess of sulphur has a deletereous effect on the rubber, owing to the sulphur efflorescing, and on coming to the surface forming an acid, and causing the surface to crack, especially in hot climates. Another method of preventing the bad effect of the sulphur, is to vulcanise with sulphide of antimony, instead of free sulphur, which is largely adopted for goods for the Indian market. The lead oxide is principally used to render the rubber oil-proof. Whiting is used for cheapening the rubber, also for hardening it. After mixing, the rubber is taken to the calender, where it is run out with a loose interlayer of cloth, to prevent it from sticking. It is then taken to the mechanical department, where it is shaped as required, and prepared for the last process of vulcanising. There is also another calender called the friction calender, with three rollers, the lowest of which revolves at a slower speed than the others. It is used

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for pressing the rubber into the cloth for making hose and belting. The rubber is fed in between the two upper rollers, and the cloth between the two lower. After the cloth has been coated in this manner, it is taken to the spreading machine, where it receives a further coating of rubber which has been dissolved in naphtha, by being run between a roller and a knife gauge, then run over steam chests to evaporate the naphtha. For making gas tubes, tyres, etc., the rubber is run out of a forcing machine, similar to that used in making lead pipes. The process of vulcanising, which is the last process, consists of exposing the rubber to a considerable heat, which must be greater than the melting point of sulphur. For shaped goods, such as valves, horse-shoe pads, railway carriage body blocks and window cushions, it is placed in iron moulds and clamped together, then placed in a vulcanising pan, which is a large boiler, the lid of which is then screwed up, and the steam turned on. Insertion and thin sheets are also vulcanised in the vulcanising pan, rolled on a cylinder with an interlayer of cloth; thick sheets, however, are vulcanised between steam chests with planed surfaces. There is another process of vulcanising by chloride of sulphur, known as the cold cure for waterproof textures, and, although this process had great disadvantages, it was universally used, as the steam destroyed the woollen fabrics. However, it is now almost entirely abandoned by the introduction of the dry heat process, which consists of hanging the waterproof cloth in a chamber lined with steam pipes.

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The amount of resin present in the various rubbers of commerce differs a good deal. The following table, published by H. L. Terry, F.I.C., in the *Journal of the Society of Chemical Industry*, for 1889, shows how greatly the rubbers vary in this respect. The figures refer to washed rubber.

Name of Rubber.	Per cent. of Resin.
Para	1·2
Ceara	1·3
Virgin	2·5
Colombian	2·5
Mozambique	3·0
Rio Janeiro	5·8
Madagascar	6·1
Sierra Leone	7·4
Borneo	7·9
Assam	9·3
Mangabeira	10·5
African Ball (1)	18·5
African Ball (2)	22·8
African Flake	41·2

It is also stated as generally true that the value of a raw rubber, as far as tensile strength is concerned, is inversely to its contents of resin.

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CHAPTER VII.

BAHIA. PORT FACILITIES. EXPORTS. HOW FREIGHT CHARGED. RAILWAYS. LIGHTHOUSE. PLACES OF INTEREST IN VICINITY. COMMUNICATION WITH OTHER BRAZILIAN PORTS. WHALE INDUSTRY. TOBACCO AND COTTON. TRADE WINDS. VARIABLES. HORSE LATITUDES. DOLDRUMS. GEOGRAPHY OF THE SEA. SEAFARING RISKS. STILL MORE YARNS. MEMORY. CARGO LOST OVERBOARD—PROCEDURE. BILLS OF LADING. INSURANCE POLICY. GENERAL AND PARTICULAR AVERAGE.

SHORTLY after leaving Pernambuco we passed the Royal Mail Steam Packet Company's steamer 'Danube,' and exchanged the usual compliments. The weather was intensely hot, but towards evening it became cooler, and we were privileged to see a most lovely sunset. The sky overhead was of a beautiful violet colour, blending into a reddish purple, and beneath this, light pink and yellow, with deep orange on the horizon. It was a brilliant scene, and the passengers one and all gazed at it until the day merged into night, which, as the reader will know, rapidly follows the sunset in the tropics.

The distance from Pernambuco to Bahia is 400 miles, and we covered it in 37 hours, coming to an anchor in Bahia Bay at six in the morning. Bahia, or 'All Saints' Bay, is one of the finest in the world, and is sheltered by the island of Itapaca. It was discovered in the year 1503, by Americus Vespicus, under the patronage of the King of Portugal, Don Manoel. We were followed into port by a German steamer, 'San Nicolas,' and also a Brazilian steamer, the 'Braganza.'

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A Lamport & Holt boat and three of H.M's cruisers came in shortly afterwards. It was quite cheerful to see the British 'handy' men rowing over to us for their mails. We went ashore at 7.30 a.m., as there is no

VIEW OF BAHIA.

time like the early morning for getting about. Bahia, being built on the side of a steep hill, presented a striking appearance in the morning sunlight, with its glittering domes, its church towers, and its red-tiled roofs. The streets through which we passed were, however, narrow, dirty, smelly, and very crowded, principally with negroes and negresses, and plenty of naked children. The negresses are, for the most part, very large and picturesque, in their turbans, neatly arranged shawls and skirts of many colours. The

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negroes were very scantily attired, in most cases only wearing loose trousers. The houses were painted in the same gaudy colours as in Pernambuco.

The city of Bahia consists of an upper and lower town, and we reached the former, which is built on the cliffs, by means of an elevator. The upper town we found very interesting and beautiful, many of the houses having their fronts completely tiled—peacock blue being apparently the favourite colour. There were also some fine old churches and some good shops, though the lackadaisical way in which the shopkeepers attend to their customers surprised some of our North American friends, who hinted that they had not come to take up their residence in the quarter. The market is the place to visit, if you have a good supply of eau-de-cologne with you, as you will be much interested there with the parrots, cockatoos and birds of all kinds, and the several varieties of monkeys. The fruits also excited our curiosity, as we found many kinds we had not seen before. We bought a few 'sapetos,' as the name seemed somewhat akin to the schoolboy name for apples, and it occurred to us at the time that it would be a work of some interest to trace out the origin of many words used in common parlance which come under the denomination of 'slang,' and which, of course, should never be employed. Our 'sapetos,' however, were very different from the apples we pictured. They looked exactly like potatoes, and when eaten tasted something similar to a mixture of fig and plum.

The entrance to the bay is much wider than that

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THE BARRA—ENTRANCE TO THE BAY OF BAHIA.

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of Rio de Janeiro, but not so picturesque. It is what is more to the point, easy of access at all times, there being ample depth of water for the largest steamers afloat. The rise and fall of the tide is about seven feet (spring tides).

There are a number of jetties used for the loading and unloading of lighters, but there are no piers alongside which steamers can go. The quay wall is so shallow that only small boats (saveiros) can be brought alongside, and passengers going ashore hire these from the natives at a small cost. There are plenty of wooden launches in the port, ranging from 35 to 180 tons, and also a number of tug-boats.

Repairs to ships and steamers which can be performed afloat, can only be undertaken, as no dry docks or patent slips exist capable of taking any vessel over 80 feet in length. There are several good engineering shops ashore where repairs, unless of an exceptional size, can be undertaken. We visited that of Messrs. Wilson, Sons & Co., Limited, and found it a much more extensive establishment than their Pernambuco branch.

In 1899 the exports were :—

Coffee - - -	14,938,500 kilos.
Cocoa - - -	9,185,160 ,,
Tobacco - - -	11,348,190 ,,
Skins - - -	346,517 ,,
Piassava - - -	71,186 packages.
Wood - - -	7,912 pieces.

Of these quantities the following were exported to the United Kingdom :—

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Coffee - - - -	989,700 kilos.
Cocoa - - - -	3,095,080 ,,
Tobacco - - -	1,601,250 ,,
Skins - - - -	37,765 ,,
Piassava - - -	46,601 ,,
Wood - - - -	3,028 ,,

The Bahia Mercantile Association publish the following list, showing the number of kilos. to the freight ton :—

Wood in cases, boxes or barrels - -	1,000 kilos.
,, bags - - - - - -	1,150 ,,
Coffee in barrels - - - - -	900 ,,
,, bags - - - - - -	1,050 ,,
Tobacco Leaf in bales - - -	600 ,,
,, in mangotes or rolls - - -	1,050 ,,
Dry Hides - - - - - -	650 ,,
Hides salted - - - - - -	800 ,,
Green Hides - - - - - -	1,000 ,,
Cotton - - - - - - -	400 ,,
Cocoa in bags - - - - - -	800 ,,
Tapioca in bags or barrels - - -	700 ,,
Wood - - - - - - -	1,000 ,,
Piassava pressed - - - - -	600 ,,
India rubber - - - - -	700 ,,
Bones - - - - - - -	600 ,,
Hoofs - - - - - - -	500 ,,
Fish oil - - - - - - -	1,000 ,,
Rum - - - - - - -	1,000 ,,
Palm Oil - - - - - - -	1,000 ,,
Molasses - - - - - - -	1,000 ,,

There are three railways in the State of Bahia, viz., the Bahia and São Francisco, the Bahia Central, and the Estrada de Ferro de São Francisco. The first two are under English management, the third is in

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native hands, and is an extension of the Bahia and São Francisco Railway. The Bahia and São Francisco runs to a small town called Alagoinhas, 123 kilometres distant from Bahia, and the journey occupies about six hours. From this point the native railway starts, and has its terminus in Joazeiro, two days' journey distant.

The Bahia Central Railway starts from a town called São Felix, about seven hours' voyage by steamer up the Bay and Paraguasu River from Bahia, and after a run of 244 kilometres, reaches the end of the line on one side at a place called Machado Portella, and on the other Bandeira de Mello, 254 kilometres. There is also a small branch line to a market town called Feira, 45 kilometres.

The lighthouse of Santo Antonio da Barra stands at the entrance of the bay, and the light is visible in clear weather at a distance of 15 miles. Inside the bay there are three small beacons,—on the Fort of Santa Maria, at the Barra, on the Fort of São Marcello (or do Mar), inside the port, and on Mont Serrat Point, the promontory to the north of the town.

There are many places of interest in the vicinity of Bahia, such as the Barra, Rio Vermelho and Itapagipe, but our time in the port was so short that we were unable to visit any of them. The interchangeable steamer tickets referred to in Chapter I. will now make all these possible without much additional expense.

The communication with other Brazilian ports is good, as besides a weekly foreign mail steamer north and south, there are continual calls by both

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national and other boats. The service to the small ports inside the bay is in the hands of a national Company, called the Cia Navegacao Bahiana, which runs small, shallow-drafted steamers three times a week to the ports of Nazareth, Cachoeira, Santo Amaro and Valenca, and also maintains a daily service between Bahia, Itaparica, Madre de Deos, Santo Estavao and Bom Jesus. The fares range from one to five milreis.

We saw quite a number of whales after leaving Bahia, which, as previously stated, come up from the South in order to clean themselves on the coral reefs. Whilst so engaged they are frequently captured, and hence it is that the whale industry is an important one at Bahia, whence a considerable quantity of whale oil is shipped each year.

Tobacco and cotton, as will be seen from the statistics given above, form very important industries, and the tobacco is really very good.

An interesting conversation took place at table shortly after leaving Bahia, on the subject of the trade winds, and the benefits to shipping which resulted from the discovery, as they became properly understood and utilised. There are, it seems, two zones of perpetual winds, or atmospheric currents, arising from the action of temperature and the diurnal motion extending round the earth, from the parallel of above 30° north and south, viz., the zone of the N. E. trades on this side or north of the equator, and of the S. E. on the other side, and these with but little interruption blow constantly. Maury, who

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seems to have been the first to record the existence of these winds, writes: 'Our investigations shew that the S.E. trade wind region is much larger than the N. E. (Atlantic Ocean only); that the S. E. trades are fresher, and that they often push themselves up to 10° and 15° of north latitude, whereas the north-east trade wind seldom gets south of the equator. The zone of the north-east trades extends on an average from about 29° north to 7° north.' He also goes on to say that seafaring people have, as if by common consent, divided the ocean off into regions, and characterised them according to the winds, *e.g.*, there are the 'trade wind' regions, the 'variables,' the 'horse latitudes,' the 'doldrums,' etc. The 'horse latitudes' are the belts of calms and light airs which border the polar edge of the north-east trades. They were so called from the circumstance that vessels formerly bound from New England to the West Indies with a deck load of horses, were often so delayed in this calm belt of Cancer, that, for the want of water for their animals, they were compelled to throw a number of them overboard.

The 'equatorial doldrums' is another of these calm places. Besides being a region of calms and baffling winds, it is a region noted for its rains and clouds, which makes it one of the most oppressive and disagreeable places at sea.

A vessel bound into the southern hemisphere from Europe or America, after clearing the region of variable winds and crossing the 'horse latitudes,' enters the N. E. trades. She then gets into the

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region of calms—the doldrums—and thence into the S.E. trades.

There is no doubt that a knowledge of the geography of the sea is of great advantage to the mariner, and particularly so to those in command of sailing vessels. 'The world's trade winds are,' H. H. Bancroft points out, 'broken by the Continent of the two Americas interposing its whole length across the world's expanse of waters, where otherwise the two greatest of oceans would be thrown into one, as indeed the fifteenth century cosmographers thought them to be. In the South Pacific the trade wind springs up some distance from the shore of South America, and blows towards Australia.'

One of the passengers, who seemed to ever want to be in the throes of a joke, said that he knew we had got into the 'horse latitudes' as we were to have a concert that night; but no one heeded the interruption. The concert was a great success notwithstanding.

We had a strong breeze the next day, and were glad to find warm clothing to put on, although we were so near the equator. Then we were nearly run into by a grampus (a species of whale), but he took a fright, and just got away in time to avoid our ship, and to give us a good view of his proportions. This little incident gave rise to some general talk respecting the risks our seamen run every day, the more especially in regard to those incurred in making port, which reminded the writer of the story on 'Ribbons,' told by William Thackeray in his 'Roundabout Papers,' and where, in describing a voyage he made to North

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America, he alludes to the anxiety of the captain to fix the light. Then, as by a sudden inspiration, he (Thackeray) voiced the sentiment of the entire world; but as the world is apt to forget and undervalue services which, by their frequency become common, it is well that it should be reminded, lest that spirit of callousness should give cause for discouragement in a band of the most worthy men that ever worked for King, and the welfare and advancement of his dominions. 'The daily round and common task' brings out heroes in every phase of life, and it is not merely our army and navy that should gather all the praise. Our mercantile marine—though threatened in its supremacy—is and has been the builder up of the great British nation, and battles, though bloodless, are daily fought and won by it in the arena of commerce. Now, let the mariner have his due, and let us listen to Thackeray for a while. He writes:—

'And so through storm and darkness, through fog 'and midnight, the ship had pursued her steady way 'over the pathless ocean and roaring seas so surely 'that the officers who sailed her knew her place 'within a minute or two, and guided us with a won- 'derful providence safe on our way.' Then alluding to the fixing of the light, he continues: 'By this 'little incident (hourly, of course, and trivial to sea- 'going people) I own I was immensely moved, and 'never can think of it but with a heart full of thanks 'and awe. We trust our lives to these seamen, and 'how nobly they fulfil their trust. They are under 'Heaven as a Providence for us. Whilst we sleep,

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'their untiring watchfulness keeps guard over us. 'All night through that bell sounds at its season, 'and tells how our sentinels defend us. It rang when 'the 'Amazon' was on fire, and chimed its heroic 'signal of duty, and courage, and honour. Think 'of the dangers these seamen undergo for us; the 'hourly peril and watch; the familiar storm; the 'dreadful iceberg; the long winter nights, when the 'decks are as glass and the sailor has to climb 'through icicles to bend the stiff sail on the yard. 'Think of their courage and their kindnesses in cold, 'in tempest, in hunger, in wreck. "The women 'and the children to the boats," says the captain of 'the 'Birkenhead,' and with the troops formed on the 'deck, and the crew obedient to the word of glorious 'command, the immortal ship goes down.

'The Nile and Trafalgar are not more glorious to 'our country, and are not greater victories than those 'won by our merchant seamen.'

Many other instances of later date could be added to those quoted by Thackeray, but why gild the gold!

Long voyages are responsible for many things, and there was a good deal of 'chaff' amongst the bachelors of our party at the mess they had made of life in having resisted the charms of the fair sex until, as someone expressed it, they had grown old and ugly, and love could no longer play a part. Two of our Hibernian friends got rather warm on the subject, one being married and the other single, and the discussion ended thus: 'Be jabers a bachelor is only the small part of a man'; to which the retort rapidly came,

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'Well, then, a married man is only the small part of a woman.' The captain, however, who is always the champion of the ladies, soon quelled the dispute, which then resolved itself into a story-telling episode. Now, the proverbial modesty of seamen in putting forward their claims for recognition, and which we have alluded to above, brought forth a story connected with the fraternity whom our American cousins say 'suffer from swollen heads,' and have a great deal of 'hot air' about them. The claret was being served at dinner at the time, and reminded our barrister friend of the occurrence, which he related as follows :—'A young barrister, who was present at a lunch in Dublin, on one occasion very haughtily and loudly remarked that he could not drink port as his family, for six generations past, had suffered from gout through drinking port wine of the very finest vintages. Another barrister present, thinking his confrere was boasting, rejoined in rich brogue, 'Shure that's strange, for I can't drink claret, for my family, for six generations, have drunk nothing else, and have always suffered from spasms.'

Now, this was not in disparagement of the ship's free claret, which was praised on all sides as sound, wholesome, and refreshing, but it served its purpose as a 'reminder.' What a strange storehouse the memory is. Facts and stories heard long ago, and apparently forgotten, come out quite fresh at the sound of a voice, a gesture, a word or a look, as though culled a few hours previously. It is just a question whether what is once stored away by the memory is ever quite effaced,

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that is to say, if we have mastered and grasped a fact or a circumstance, it is open to argument whether it ever really leaves us. We may have impressions which time effaces, and a good thing it is that it should be so, as much bad is wiped out with the good, but all we learn thoroughly, and all our thoughts which are worthy the name, and all we hear and have done, which the mind takes in, require but the right key to be touched to awaken the sleeping chords of memory.

Matters maritime formed a perpetual subject of converse, and in this connection I should perhaps have recorded earlier that when re-embarking at Pernambuco we noticed a steamer, which had put out from the inner harbour to complete her loading outside on account of the depth of water on the bar. This is naturally an expensive operation, on account of the high sea always running at the port, and is attended with considerable risk to the cargo. Several packages were lost overboard whilst we were watching, but no doubt the captain entered his protest before the British Consul 'against all losses and damages owing to the launches surging heavily consequent upon the high sea,' and reserved the right to extend the protest at the first convenient opportunity. This action is necessary, to free the ship from liability for accidents which cannot be controlled, and the shipper secures himself from loss by insurance. These extended protests are signed by the captain, chief officer, and a member of the crew, in the presence of a notary public, and they protest that all and whatever damage or loss hath arisen to the said vessel, her tackle, apparel, or cargo, or to the owners

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thereof respectively, hath been wholly owing to the circumstances before stated, and to the dangers and perils of navigation, and not to the negligence, misconduct, want of skill, or attention of the said declarants, or any of the said crew of the vessels, or to an insufficiency of the said vessel, her tackle, apparel, or furniture. This occurrence gave rise to a discussion as to the contract for the conveyance of cargo, and which is embraced by the bill of lading.

Naturally, at the very cheap freights ruling in every trade at the present day, consequent upon ever increasing competition, shipowners cannot be responsible for losses arising from causes beyond their control, and it is scarcely to be wondered at, therefore, that the bill of lading should have grown into a formidable document. Every shipper should make himself conversant with his bill of lading, and should cover his risks by insurance. The bill of lading, however, is a simple document when compared with an insurance policy. This has developed, through litigation principally, into a most abstruse form; in fact, I think it would take a committee of underwriters, average adjusters, and Philadelphia lawyers combined to explain some of the policies. There is a growing disposition on the part of underwriters, it seems to me, to evade claims, instead of encouraging business by paying without a grumble. Premiums are not paid for amusement. Naturally, every business must have its safeguards, and unfair and improper claims must be resisted; but surely some simple, short, plain policy, shewing to what extent an insurer is covered without

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too many technical phrases, can be evolved, which would benefit the shipping world, make things easy for new shippers, and simplify and expedite the settlement of claims.

The subjects of bills of lading and marine insurance must, however, if the reader desires to study them, be followed in other works than this.

Of course, there are times when the ship has to contribute towards the loss of or damage to cargo, and she herself requires to be insured, and we therefore find insurances against all risks, total and partial loss, inclusive and exclusive of general or particular average. For instance, on occasion some part of the ship or cargo has, for the safety or preservation of the whole, to be sacrificed, and this loss is made good to the party on whom it falls by an average contribution upon all—termed a general average upon the amount of the ship, cargo and freight. A particular average may shortly be said to relate to occurrences which do not apply to the general interest, such as damage by fire, water, or other substance, diminution of quantity, deterioration in quality, and both diminution and deterioration.

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CHAPTER VIII.

RIO BAY. SUGAR LOAF MOUNTAIN. SLEEPING GIANT. CITY OF RIO. DRY DOCKS. REPAIRING SHOPS. TOWAGE FACILITIES. LIGHTERAGE AND FACILITIES FOR HANDLING CARGO. TRADE STATISTICS. CONSULAR REPORTS. IMPORTS. CAUSES TENDING TO DIMINISH TRADE WITH GREAT BRITAIN. EXPORTS. RAILWAYS. RUA DO OUVIDOR. CORCOVADO. MOTHS AND BUTTERFLIES. TREES, ETC. LOTTERY. EXPLORATION OF BAY. ISLAND OF PAQUETA. YARNS. LARANGERIAS. LIZARDS, ETC. "PELOTA." COURTSHIP IN THE BRAZILS.

UNFORTUNATELY the day upon which we arrived in Rio Bay was misty, and what may justly be termed one of the finest views in the world was spoilt. But we saw it later with the advantage of a clear sky and brilliant sunshine, and were convinced that all which has been written respecting this 'miniature summer sea, upon whose bosom rest a hundred fairy isles, and around whose shores dimple a hundred bays,' can but imperfectly describe its beauty. The surrounding mountains are clad in tropical verdure, and with the ever changing hues of sky and mist, present a picture of incomparable beauty. The harbour is one of the largest and safest in the world, and the entrance, which is about a mile in width, is from a southerly direction, with the islands of Pai and Mai on the right, and Ihla Raza (with its lighthouse) and a number of other semi-barren islands on the left. The entrance to the harbour is overlooked by the Sugar Loaf mountain, and the coastline forms a huge resemblance

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of the human figure, and has thus come to be named the 'Sleeping Giant.'

An English 'middy,' so the story goes, on one occasion caused a great sensation by climbing to the top of the Sugar Loaf mountain—a feat which looks impossible—and planting the British ensign there. This caused great annoyance to the authorities, especially as no one could get the flag down, until, so it is said, an American girl came along and dipped it.

SUGAR LOAF MOUNTAIN, RIO HARBOUR.

The harbour, after passing between the guardian forts, opens out into a wide, handsome bay, dotted about with forts and islands, having built upon them handsome Customs and military establishments.

The City of Rio de Janeiro covers an area of from eight to nine square miles, and had a population, according to the last census (December, 1890), of 515,559, of which 322,290 were white, and 193,269 were coloured. These figures are, however, held to be erroneous, the general idea being that the total population is about 800,000. The city is most picturesque, rising in terraces right up to the mountains,

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and stretching out along the south side of the bay for a great distance. The roofs are of the red tiled order, the houses are of all colours, and jutting out against the sky-line are handsome domes, turrets, pinnacles and a tropical foliage. The harbour has an area of over thirty square miles, and there is practically no bar. At the shallowest part of the entrance there is 33 feet of water during 'neaps.'

BUM BOATS, RIO HARBOUR.

The anchorage is good (abreast of Rat Island), with muddy bottom, with the exception of one bank—marked by buoys—where there is only 21 feet of water. The depth of the bay varies from 30 to 130 feet, and the largest vessels afloat can enter the bay. Spring tides rise 4 feet, neaps 3 feet.

We were conveyed from the steamer to the quays

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in small boats, as there is no wharf alongside which a steamer drawing more than 21 feet of water can go, though docks are contemplated. All loading and discharging is done by means of lighters or barges from November to May, when vessels must lie, on account of sanitary reasons, 300 metres from the shore. From May to November, some of the small vessels may go alongside the 'trapiches,' *i.e.*, bonded warehouses, which belong to private parties. The depth of water alongside these varies from 12 to 21 feet.

There are five dry docks at present in Rio de Janeiro, viz. :

		Length.	Width.	Depth.
1.	Dique Santa Cruz.	423 ft.	70 ft.	24 ft.
2.	,, Guanabara.	258 ft.	55 ft.	20 ft.
3.	,, da Saude.	520 ft.	70 ft.	24 ft.
4.	,, de Mocanague.	405 ft.	45 ft.	18½ ft.
5.	Ihla Viamia.	230 ft.	74 ft.	24 ft.

Besides the docks there are several repairing shops fitted with the most modern machinery, and owned by the following firms:—

Wilson, Sons & Co., Ltd. - -	Ilha da Conceicao.
Brazilian Coal Co. - - -	Ferreiros Island.
Augusto Gomes de Moraes -	Saude.
Silva and Grilla - - - -	Saude.

Messrs. Wilson, Sons & Co., Ltd., have a slipway 220 feet long and 80 feet wide, with lifting power available up to 400 tons. They have also sheer legs for lifting up to 20 tons.

On the subject of towage facilities, I may say there are two owners of seagoing tugs, viz.:—Messrs. Wilson, Sons & Co., Ltd., and the Brazilian Coal Co., Ltd.

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The former own three tugs, one 107 feet long by 18 feet wide, and 120 horse-power, and two of 80 feet by 16 feet, and 40 horse-power. The largest tug is fitted with a salvage pump capable of pumping 1,000 gallons of water per minute. The Brazilian Coal Company has one tug of about 45 horse-power. In addition, the Brazilian Government owns two tugs of 85 and 70 horse-power respectively, which are fitted up for salvage purposes. There are also a number of small steam launches suitable for harbour service. The charge for towage is according to agreement.

The lighterage accommodation at the port is equal to about 25,000 tons, and is made up principally of lighters of 80 to 100 tons capacity. The majority of the lighters are closed, kennel-hatched, opening on one side only. When the lighters are closed, tarpaulins are used to cover the moveable hatchways, thus making them watertight.

There are three floating cranes at this port capable of lifting heavy weights, the largest of which belongs to the Arsenal of War, and will lift up to eighty tons. This, being a government crane, can only be obtained by petition, an exceedingly slow process, and very uncertain.

The second belongs to the Marine Arsenal, and was originally constructed to lift 60 tons, but owing to its age and neglected condition, it is generally considered that it would be dangerous to attempt anything over 40 tons on it. All risks of damage, whilst it is employed, is for account of the hirer, and would have to be made good. For these two cranes there is no

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fixed charge, and terms would have to be made as the occasion arises. The third and smallest crane belongs to a private company, and it can take up to 30 tons, and is always for hire. This company charges the following rates:—Rs. 100·000 to Rs. 300·000 per lift. Journeys Rs. 100·000 to Rs. 250·000. Hire of ropes and chains extra. One lift generally costs from £25 to £30.

There is also a fixed crane on Ilha das Cabras, belonging to the Marine Arsenal, which can lift 80 tons. Steamers of light draught can go alongside.

The revenue derived from import duties in Rio has diminished during the three years ending with 1900, as follows:—

In 1898 it was	219,900,000	milreis.
,, 1899	,,	199,900,000	,,
,, 1900	,,	160,400,000	,,

and exchange has been down as low as 8d. per milreis.

Anyone embarking in extensive business in any of the foreign Republics, would naturally take the precaution to refer to the diplomatic and consular reports, which are annually issued, and which deal pretty fully with the financial condition of the several countries, and furnish other very valuable information. They do not, however, in many cases give as valuable information as they might in the direction of shewing how the trade with Great Britain can be best improved and strengthened as against competition, and the consuls should be allowed extra remuneration by the government to enable them to take expert opinions on the conduct of trade in all branches, and to employ travelling agents where necessary.

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No doubt the constant fluctuations in the value of the milreis are detrimental to trade, as well as the continual alterations in customs tariffs, etc.

The chief items of the British supplies to Rio de Janeiro, and which, I am glad to record, represent about one-third of the whole, greatly outdistancing all competitors, consist of:—Rice, cotton textiles and yarn, coal, iron and steel metals and manufactures, machinery and tools, dried Canadian cod fish, sewing thread, cotton laces and manufactures, woollen goods, silks, manufactures of linen, hemp and jute, jute yarns, boots and shoes, cutlery, chemicals, provisions, thread, prepared leather, flour, cement, etc.

The rice comes nearly all direct from British India, the value of the shipments in 1900 amounting to £920,000.

The British Consul, in his annual report, goes straight to the root of one of the causes which tends to diminish trade. He says:—'One matter in particular deserves fuller consideration on the part of the British manufacturer, and that is the necessity of his making personal acquaintance with the markets he is interested in. Unlike his continental colleague, he is, judging by Rio movements, too much disposed to neglect travelling to distant countries, under the impression probably that local British merchants may be considered to hold a brief in his special cause, and that his interests are perfectly safe in their keeping. He forgets that the British merchant has not always a free hand to buy where he pleases. No doubt, all things being equal, the British merchant is desirous of giving

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the preference to his own nationality, but too often the requirements of his constituent leave him no option but to buy from non-British sources. It therefore behoves the British manufacturer to learn by personal experience just what he has to compete against in the market.'

Germany comes second in the list of importers to Rio, and is making rapid headway. The German will make just what the country demands, not endeavour to make the country adapt itself to what he has been in the habit of producing.

The chief exports from Rio de Janeiro are coffee, gold ingots, manganese, rosewood, hides, rubber, tapioca and old metals. In 1890 the value of the exports amounted to £6,620,000, exclusive of coined specie, the value of the coffee alone being £5,670,000.

Of the countries receiving the exports, the United States gets 45 per cent., Germany 20 per cent., Holland 8 per cent., France 7 per cent., Austria Hungary 6 per cent., United Kingdom 4 per cent., Belgium 3 per cent., other countries 7 per cent.

The principal railways running out of Rio de Janeiro are the Central Railway—in connection with the States of Sao Paulo—and Minas Geraes.

Connecting with the Central Railway at various points are the following :—

Minas and Rio Railway (English) runs from the station of Cruzeiro, in the State of Sao Paulo, into the State of Minas Geraes.

Oeste de Minas. A native Company in connection with the States of Rio de Janeiro, Minas Geraes and Goyaz. This railway is in receipt of an annual

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subvention from the Federal Government and the State of Minas Geraes.

Sapucahy Railway. A native railway which joins the Central at the station Barra de Pirahy, in the State of Rio de Janeiro.

Leopoldina Railway (English) runs into the State of Minas Geraes, and has a daily service to Petropolis, the journey across the bay being made in well-appointed steamers.

Melhoramentos do Brazil, runs to Parahyba do Sul, in the State of Rio.

Rio do Ouro, belongs to the Government, and runs into the interior for a distance of about 100 kilometres.

Rio de Janeiro, although the streets are, with one or two exceptions, narrow and malodorous, is an extremely fine city. The Rua do Ouvidor is no doubt the most attractive street for the traveller, as it contains the finest shops, and in some of these are sold most beautiful humming and other birds, and imitation flowers made from bird feathers. We had determined, as a matter of precaution, to stay outside the city, and we therefore took up our quarters at the International Hotel, which is situate about half-way up the Corcovado (Hunchback) Mountain. The pathway to the top of this mountain, from which the finest view of the harbour is obtainable, is interesting and beautiful, though those who wish for little fatigue will more appreciate the funicular railway. It is a work of considerable engineering skill, and passes through most charming localities, whilst here and there views of the

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harbour and the mountains beyond, bathed in soft atmospheric blue are presented, which cannot but perpetually live in the memory, amongst the choicest of scenes ever witnessed. And then the sunsets, as seen from 'Corcovado's' heights, beggar all description, and vie with the finest Turner ever painted. A critic once said to Turner, 'I never saw such sunsets as those you paint,' and he at once replied, 'No! don't you wish you could.' Well, you can if you go to Rio.

MOUNT CORCOVADO, RIO HARBOUR.

Never have I seen in Nature such a wonderful variety of butterflies and moths, both large and small, as flitted in and out of the woods, and over the pathway up the Corcovado, most brilliant in colour, scarlet, yellow, orange, tipped greenish blue and grey, some spotted on the upper wing, and some beneath, and all of a rich, velvety appearance. In a day or two, with a suitable net, one might readily make an excellent collection.

It takes almost an hour to get into the city from the International Hotel, and the route by electric tramcar is very picturesque and interesting from a botanical

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point of view. There is the most lovely vegetation all round, the banana trees looking for all the world like huge ferns, with the golden-coloured fruit hanging down in great bunches, each with its purple seed pod at the end. Bamboo hedges—and there is no more beautiful hedge than a bamboo one, with its feathery fronds—huge trees covered with red flowers, and orchids, what we know in England as hothouse plants growing like weeds by the roadside, cacti and palm trees everywhere, prickly pear and cokernut trees, trees with red leaves looking like huge bouquets, and here and there, in this environment of colour, pretty chalets, or 'chacaras' as they are called, with domes and minarets, thrust themselves out into the open and add a charm, if such be possible, to the blue expanse of bay beyond. Flowers are most abundant and beautiful, but they fade very rapidly when cut, on account of the heat.

Everything for sale in Rio de Janeiro seemed very dear, and the principal business, one might readily imagine, is the lottery, which, not only in Rio, but in every town of importance in the Brazilian and Argentine Republics, forms the favourite method of gambling. There is the 'state-supported' lottery, and others formed by private syndicates. Lottery tickets are sold everywhere, and strangers are readily induced to try their fortune by the story which is well known, at all events in the Brazils, of an English captain who was pestered by one of the 'gamin' class to buy a ticket. He repulsed the ragged urchin several times, and then went into the English Club. When he came out again the boy was waiting for him, and renewed his solicita-

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tions until the captain, weary of him and them, bought the ticket. What was his surprise and pleasure when, in a few days, he found himself to be the winner of the equivalent of £10,000, can easily be imagined. He was a man of heart as well as head, and he therefore sought out the boy who had brought him his good fortune, educated him, and gave him a good start in life. Another story told me was to the effect that a gentleman was so bothered one day by an urchin to purchase a ticket that he lost his temper, and struck him somewhat harder than he intended. He was sorry for this and bought the ticket, and found later that he had secured a prize of £5,000. There are blanks as well as prizes—chiefly blanks!!

The way to explore the bay thoroughly and in comfort is to go in a steam launch, and we were fortunate in receiving an invitation to make up a small party for the purpose, and probably most of us then, as expressed on the occasion, spent the best day of our lives. We left the quay at 11 a.m., and after boarding the Pacific Company's 'Liguria,' which lay at anchor, to proclaim our nationality and shake hands with the captain, we proceeded for a five hours' cruise. The day might have been created for the purpose,—it was simply beautiful, and the reader can readily imagine the pleasure we experienced in visiting a number of the small bays and islands, each possessing its own individual character and charm. The time was far too short,—we would have liked to extend it to a fortnight at least, and that period could readily be spent on such an expedition. There was a cool, refreshing breeze on

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the water, and in whatever direction we looked, whether at the Sugar Loaf, the heights of Corcovado or Tijuca, or the lofty Organ Mountains shooting up their organ-pipe-shaped summits far into the sky, the view was one never to be forgotten; and the strangeness of the foliage to European eyes gave a foreign piquancy and relish to the varied scenes. Talking of piquancy and relish reminds me of the excellent lunch we had on board, and I refer to it on account of certain curiosities we had to eat, viz., green peas and oysters, both grown on trees. This sounds somewhat like a fairy tale, and even our world-wide traveller, who was on board, 'winked the other eye' at the statement. It was none the less true. The peas tasted very much like what we were accustomed to at home, but they are cooked in the shell which is very tender, and in fact regarded as the best part of the vegetable. The oysters attach themselves to the branches of trees, which dip into the water on the margin of the bay, and we found them to be excellent eating.

After lunch, we landed on the island of Paqueta, which is a favourite summer resort for the *élite* of Rio de Janeiro. The president of the Brazilian Republic was staying there at the time of our call, and the island proved to be worth the visit. Along the beach were tall cokernut palms with plenty of cokernuts visible, but difficult to get at. The black boys, however, find it no trouble to get the nuts, as they climb the trees with their hands and feet just like monkeys. A green cokernut, milk and pulp together, is considered a great delicacy by the Brazilian ladies. There were fruits

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growing in abundance,—oranges, lemons, figs, guavas, and a kind of small melon of a pale yellow colour, grown on low trees called 'mamão' (pronounced maman) fruit. The mamão is a great favourite with the blacks. Then, there were large aloes, coffee trees with their beautiful bright red berries, and whilst these made a charming picture, we knew that the coffee trees are seen at their best in the blossom period. Rio is a wonderful place, and as the conditions of health are very much improved, and little if any danger is run, especially in the winter and spring, say from June to November, if proper precautions are taken in the matter of food or drink (never touch the native water,—drink imported mineral water or claret, or whisky and soda sparingly), it ought to become a popular resort, especially as one can make the voyage out and home—which is in itself most interesting and healthful—in a little over six weeks.

ILHA DE PAQUETA.

A young sailor, on his return home from Rio de Janeiro, recounted his experiences to his mother, telling her he had seen mountains of sugar (sugar loaf), rivers

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of rum, and flying fish. The old lady looked at him thoughtfully for a while, and then she said 'Well, I can believe there are mountains of sugar and rivers of rum, but "flying fish" are quite out of the question.'

Our return journey was somewhat rougher, as we had the wind and tide against us, and we shipped several 'seas.' This reminded one of the party of an incident which, he said, occurred when he crossed the Atlantic in stormy weather. It seems there was a clergyman on board who was of a very timid nature, and who was constantly asking if there was any danger. On the third day out, when the storm was at its height, he went to the commander and put his question to him, and the reply he got was, 'As long as you hear the sailors swearing, you may be certain there is no danger.' However, after retiring, he became very much alarmed at the movement of the vessel, and he therefore went up on deck, and made his way forward to where some of the 'black squad' were taking the air, and as they were ornamenting their language pretty freely, he put his hands together with fervency and thanked God that the men were still 'smiling.'

After landing, we took the tram to Larangeiras, the aristocratic quarter of the city, and the ride is a good one, as the principal streets and square are traversed, and one can see the Presidential Palace, the gaily coloured houses of the rich, the Brazilian beauties reclining in the windows fan in hand, and the 'Coast of Africa,' where the negroes reside.

We found no difficulty in the matter of the money, 1,000 reis or one milreis was equal to 10d. at the time

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of our visit, though as I write it is nearer one shilling. The milreis can be had in notes from 500 reis upwards. Less than 500 reis can be had in 100 and 200 reis pieces. 100 reis, it will be seen, was equal to 1d.

During our tram ride we were surprised to see the milkmen taking the cows round and milking them at the doors of their customers. The calf usually accompanied the cow, but was muzzled to prevent it from suckling. The milking of the cow as named, however, we were told, did not prevent the 'watering' of the milk, as some of the attendants carry under their blouse an india rubber bag filled with water, with a tube running down the arm, and they manage to squeeze water into the can whilst milking. The bullock carts were also interesting, as well as the mules, which take the place of the horse in this mountainous district. I have never seen finer animals anywhere.

Lizards are very numerous outside the city, and one species, the white lizard, should be particularly avoided. One of these crawled over a man we met, and when it touched his skin it exuded something which burnt him like caustic, and caused severe pain and irritation for a month.

Of course there are mosquitos and other insects equally vicious, also grasshoppers as large as our ordinary butterfly, to add to our pleasure and disturb our slumbers (one species made a noise in the morning exactly like what one hears from a smithy), and it may be noted that in this country when one has to give a tip—and this is not infrequent—it is customary to say 'Para matar o bicho,' *i.e.*, 'for

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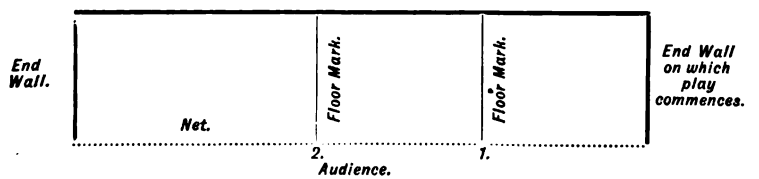
killing the insects.' There are beetles of all hues and shades, some extremely beautiful, and there are ants quite half an inch long. These are very destructive. They attack a tree in the night time, and snip off the whole of the leaves before morning, carrying them away to their nests as provision for the winter.

The great game in Rio is 'Pelota,' which has been imported from Monte Video, and originally came from the Basque provinces of Spain. It resembles rackets. There are several halls in which it is played in Rio, the largest holding at least 5,000 people. There are single and double games. In the singles two men play at a time, though there are six men in the game. The man who loses the point makes room for the next, and so on until 6 is scored, which completes the game. The player, or pelotar, has on his right hand, fixed to the wrist with a glove attachment, a basket shaped thus, and in which he catches the hard, gutta-percha ball, and flings it back against the court wall. The basket is called a cesta, and is nearly 3 feet long. The wall is a three-sided one, *i.e.*, two ends with a long stretch of wall between.



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The ball, at the lead-off, has to be struck on first bounce, and must 'let' between the first and second floor marks. The game is fast and furious, and it is difficult to follow the ball, the players being usually professionals brought up from the River Plate. There are many tricks in the game; one is to get the ball to shoot out from one end wall to the other, and the player has then to hit it without turning his body back to the wall first played against. Another is to hit the side wall near the corner, so that the ball strikes the end wall afterwards, and shoots out at an angle difficult to play. Naturally there is a great deal of betting on the game, the hall being like a racecourse fitted up with betting boxes. The company running the hall gets 20 per cent. out of all bets, the balance being divided amongst those who have won, according to a scale which is exhibited. The players are paid as much, in some cases, as £100 per month. The system of betting is usually on two men to win first and second, each man gets a number, and the score is put up on a large board.

There are very few ladies visible in the streets of Rio de Janeiro, as they do not care for walking; and the only carriages to be seen are 'Tilburys,' with the driver sitting inside, and room only for another person.

It was not my intention, in any shape or form, to introduce Cupid into this work, but the fascinating period of courtship in the Brazils can hardly be passed over in silence. The rule is that the young people

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shall not meet until engaged—therefore, when a man sees a lady he admires looking down upon him from her window, he stations himself beneath it for hours at a time, and gazes fondly in the hope of getting a secret smile or a much more coveted word. After he has done this repeatedly for a week or two, he is invited into the house, and then, if he be a foreigner in the country, he will, to his surprise, find a feast prepared, and a number of guests assembled. The father of the young lady, during the dinner or supper, announces to the company that his daughter is engaged to the young man who smiled at her through the window, and although he has not spoken a word on the subject of marriage, he has to acquiesce or get into serious trouble, and be probably severely handled. After marriage, if the husband does not go to live with his father-in-law, but fits out an establishment for himself, he is liable, under Brazilian law, to support the whole of his wife's relations. Marriage, therefore, in the Brazils, is not lightly entered upon except by young men out of employment, a circumstance which does not always seem to weigh with the fair sex.

Thoughts of matrimony are possibly good ones to close with, and we will therefore leave the recital of our further experiences in the Brazils for the next chapter.

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CHAPTER IX.

BUBONIC PESTE. RAILWAY TRAVELLING IN BRAZIL. JOURNEY TO SAO PAULO. RONCADOR. SAO PAULO. IMMIGRANTS. SAO PAULO TO SANTOS. SANITARY STATIONS. SANTOS. DOCKS AND WAREHOUSES—FACILITIES FOR HANDLING CARGO. COFFEE TRADE AND SEASON. PRAIA JOSE MENINO. TROLLEY ESCAPADE. BATHING AT SANTOS. CHACARAS. PARTICULARS *RE* PORT AND CHARGES. TOWAGE. BANKS. STEAMSHIPS USING SANTOS PORT. DOCK RULES. INSPECTION OF RIVER. RETURN JOURNEY TO RIO. PETROPOLIS.

AS our business necessitated a visit to Santos, which, up to recently, has borne the most evil reputation of all the Brazilian ports on account of the prevalence of yellow fever, we did not, as the reader may readily imagine, altogether relish the idea of going there. We were, however, to be agreeably disappointed with the city and port, so great have been the improvements made there during the last few years; and we were to have the pleasure of a journey through the interior to Sao Paulo, about fourteen hours by rail, and then to Santos, another two hours distant. Bubonic 'peste' was said to prevail in Rio de Janeiro, and we had, consequently, to be at the railway station an hour before the published time of departure in order to get our luggage fumigated, and to obtain passports, which are issued in the station, containing a full description of our appearance, which, I am bound to say, was of a kind conducive to humility. These passports had to be presented at another part of the station, in order that our names might be wired on in advance to enable the authorities to watch our

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movements for ten days, after which time, having in the interval developed no symptoms of the dreaded disease, we would be free from further restriction. There were many houses in Rio shut up with a 'peste' notice affixed to the door, giving silent witness of the existence of the plague, which happily has now been stamped out.

In the matter of railway travelling even Brazil is in certain respects ahead of Great Britain. We use the word 'even' not in disparagement of the country, but merely to express the fact that railways are but a recent institution in the Brazils. The sleeping carriages are after the North American pattern, though not as up-to-date as those which run between New York and Chicago, with dining, smoking and toilet rooms, and well-supplied library attached. The difficulty in the Rio car was the undressing, there being no separate compartment for ladies, and the car open from one end to the other. There are two tiers of berths on either side, with loose curtains for privacy, but if the occupant of the lower berth retires first, the candidate for the upper one has either to publicly undress, to retire to bed dressed, or to wriggle out of his clothes by a species of gymnastics after getting on to his shelf. It is somewhat amusing in the early morning—early rising being insisted upon—to see a row of heads emerging from the curtains; and looking for all the world like those in Bluebeard's chamber of horrors; the facial expressions resulting from the difficulty of getting into certain garments without the appearance of doing so, affording much

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food for study, certainly not of beauty but of pantomimic effect. But even the dressing, after a few nights, becomes a matter of habit, and the traveller learns exactly how to twist his legs under his back and slip into or out of his clothes without sitting up or raising a lump on his forehead by contact with the roof of the carriage.

We left Rio de Janeiro at 8 o'clock in the evening, and at 5.30 next morning were aroused, in order to change, half an hour later, to a narrow gauge railway carriage, and in which we remained until we arrived at Sao Paulo. We were glad to be up early to see the country, and whilst not of the kind one would call grand, the scenery was certainly interesting. There were trees covered with blooms like huge azaleas, palms of various kinds—the fan-shaped being perhaps the most beautiful—and huts with surrounding walls of mud. Two kinds of sand, a red and a light brown are mixed together, the first named having adhesive qualities, and the mud so made is built up in the shape of walls. The houses or huts have a trellis work of bamboo or other wood, the interstices being filled in with the mud. Certainly these are not built to last, and there must be a great deal of waste when showers of rain come on, though in the district through which we were travelling, these were not over frequent. Our track lay through some virgin forests, and we could distinguish many orchids amongst the creepers which literally covered the trees.

At 10-30 a.m. we arrived at Sao Paulo, and proceeded to the Grand Hotel de la Rotisserie, where

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we had secured rooms in advance, there not being a great choice of hotels in the city. I mention the hotel principally because we had a fish there for breakfast known as the Roncador (Snoring Fish), and which, we were told in all earnestness, and with the evident feeling that we must of necessity be impressed to believe it, comes to the surface at intervals round the islands outside Santos, and makes a noise exactly resembling the snore of a heavy sleeper. This sounded more like a fairy tale to us than anything else, but then I must tell you that even the fish was 'stuffed.'

The State of Sao Paulo is possibly one of the most progressive in the Brazils, as a system of immigration is supported, and what seemed to us very fair arrangements are made for the reception of the immigrants, and their distribution amongst the numerous coffee plantations and farms in the district. A large, comfortable reception house is provided, and the immigrants are quartered and supported there until work is found. This, no doubt, accounts in a great measure for the rapid strides Santos, the port of shipment for the produce of the district, has made. Sao Paulo is a well-situated and healthy city, having a population of about 280,000 inhabitants, and most of the principal merchants and factors of Santos reside there in handsome 'chacaras.' The train to Santos leaves at six in the morning, in order that business may be commenced at 8 o'clock, and the journey thither is through a beautiful country. On leaving Sao Paulo, the train gradually ascends to the top of the Serra, where the engine is detached, and the

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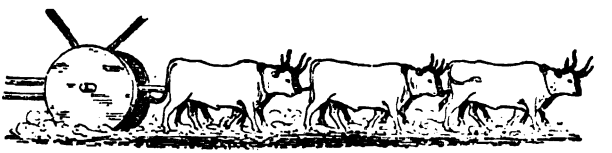
carriages, after being affixed to a wire rope, are allowed to descend by natural gravitation, the speed being regulated by the weight of another train, which is in this wise drawn up from the plain. The scenery *en route* is of a wild, tropical kind, there being plenty of virgin forest, looking like a botanical garden. Some of the trees were covered with white and red orchids, and others with white and purple blooms, presenting a picture of extreme beauty, in the dark green setting of the forest. Here and there were rough tracks on which one might see low bullock carts lumbering along. Each cart had a team of six oxen, and the wheels were simply solid discs of wood, the whole structure being light and strong, and adapted to the rough country.



Gigantic moths, light brown in colour, quite hid from view the walls of some of the stations through which we passed, and there were also plenty of 'bichos' of all vicious varieties to keep us lively when we reached the level ground.

Along the line we noticed sanitary stations, erected by the principal steamship lines using Santos, those to which our attention was particularly drawn having been erected by Messrs. Lamport and Holt and the Prince Line. To these stations the entire crews of the steamers discharging and loading at Santos, during

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the yellow fever season, were sent. Santos is now, however, quite as healthy as Rio de Janeiro, if not more so. Formerly whole ships' crews were stricken down with fever and died, and the ships being left without the slightest protection, ran ashore, and their skeletons are in evidence at the port at the present day.

After reaching the level, houses become more frequent, and the land looks like a low-lying black and dismal swamp. Fortunately this is soon passed and Santos is reached, though not without some slight feelings of fear.

There are many points of interest in Santos apart from its excellent dock system, and trapiches or warehouses. These we thoroughly inspected, in company with the dock engineer, and took note of the manner in which the coffee shipments were conducted. The warehouses and cranes, a more particular account of which we give later, are of the most modern description, and goods can be discharged and dealt with in the sheds with a minimum of manual labour. Goods are discharged on to trolleys, which pass over rails into and along the inside of the shed; and then by means of overhead travelling cranes they are stowed awaiting delivery. During the coffee season—August to January—about 2,500 to 3,000 tons of coffee are shipped per day, principally for the United States.

As previously stated, some of the principal merchants of Santos reside at Sao Paulo, but others also live at the seaside—Praia Jose Menino, which is about 40 to 50 minutes' ride from Santos on the

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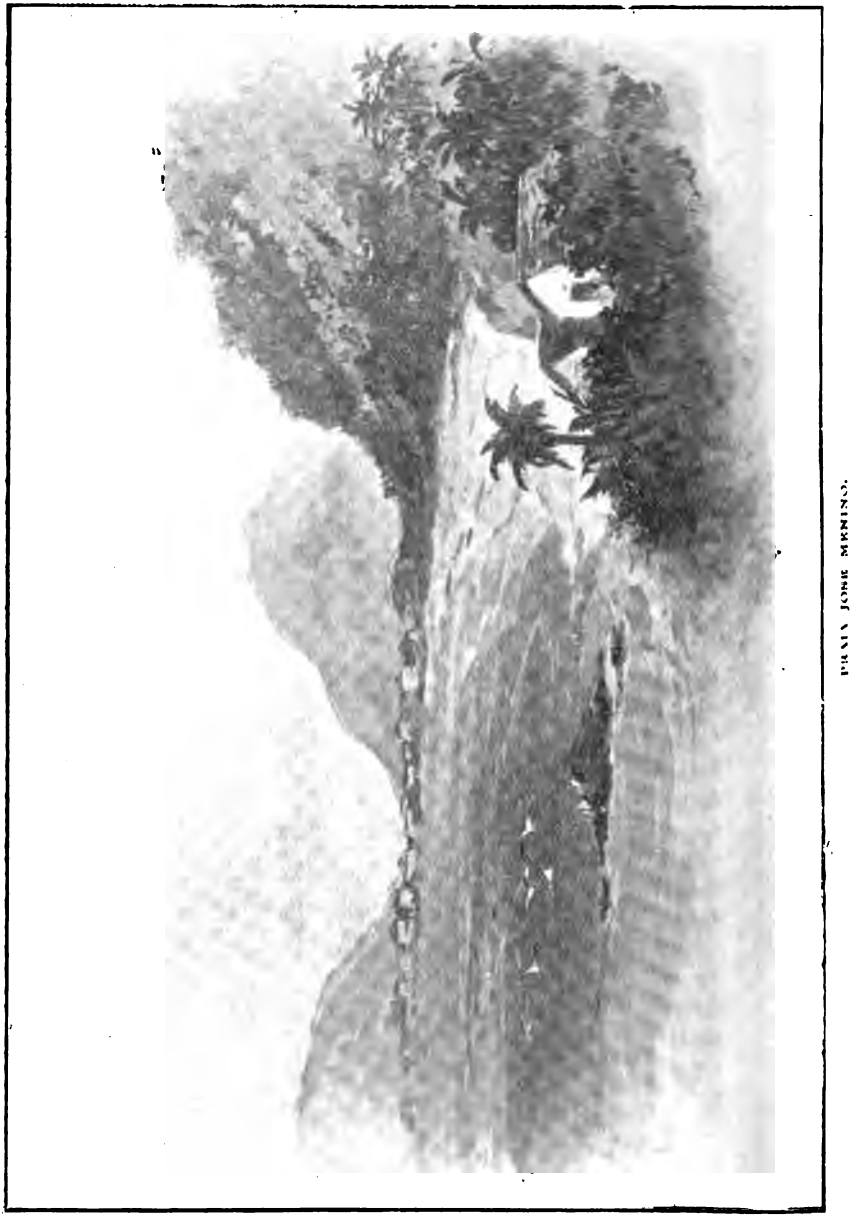

PLAZA JOSE MERINO.

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tram, or 'bond,' as it is called in the Brazils. The name 'bond' is really a term of reproach owing to the failure of one of the first tramway companies in the Brazils, the share bonds of which were in the end sold for about one shilling apiece, and were dear at that, not being worth the paper upon which they were printed. This circumstance gave rise to the name. Our 'bond' was a two mule affair, and the animals had to be changed at half distance. There is a good hotel at the Praia (the Internacional), and the place is not wanting in interest. It is right on the Atlantic, and is sheltered by the mountains surrounding the bay. There are several islands opposite the hotel, one beautifully covered with palms. A fair number of English people were in residence at the Praia during our visit, and the chief amusement in the evening was 'trolley riding' on the sands. Naturally, we did the correct thing, and took a trolley ride. The night was a very dark one, lighted only by a few stars and the phosphorescent gleams from the sea. It seemed like a mad freak to go tearing over the sands in the dark, in a springless cart drawn by a team of galloping mules. On a moonlight night, no doubt, it is a most exhilarating pastime, and even on our night it proved fearfully enjoyable, spiced as it was with the ever present likelihood of a spill, or a collision with other trollies, which ever and anon loomed up in the dark, and passed like flying phantoms. Then, on we went to the turn of the bay, splashing through several small streams *en route*, in much trepidation. Then turning, we dashed back along the edge of the tide, the trolley wheels

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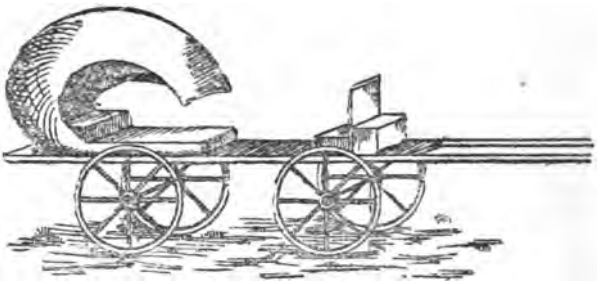
being at times partly immersed, though this was less risky than further up the shore, as the phosphorescence of the water clearly marked the track. The trolley is built to accommodate four passengers and a driver. In appearance it is like the sketch below.



THE TROLLEY.

Next morning we were much amused at the way in which some of the natives took their sea bath,—if merely standing in a few inches of water merits that designation. They were attired from head to foot in what looked like mackintosh suits, as if that which was most to be avoided was getting wet! Invariably they made the sign of the cross on entering the water; then they stood gazing out seawards, and with evident wonder, at the antics of my fellow travellers, who were disporting themselves in the waves like so many porpoises. The native 'bathers' would then carefully stoop down and sprinkle a little water over themselves, gaze once more seawards, and then hurry off to their vans.

The same old 'Bond' took us back to Santos, which we must say is a cleaner city than we expected to find, and is almost free from unpleasant smells.

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Improvements are being daily made in the drainage of the city, and beautiful 'chacaras' are springing up all round the neighbourhood. The heat, however, at the time of our visit was simply stifling, and we were glad to accept an offer to inspect the river from the docks to the entrance. There were plenty of vultures to be seen on shore, and plenty of 'sea pigs,' or porpoises, in the river. It is a crime to destroy either, both being looked upon as sacred. They are the natural scavengers of the Republic, and no doubt there is still plenty of work to be done in and around Brazilian ports, where the inhabitants are only now awakening to the necessity for perfect sanitary arrangements.

The hot season lasts from December to April.

The ordinary rise and fall of tide at the port is from four to five feet, and at exceptional times as much as seven feet. It is the invariable custom for all steamers to take pilots, but the system is not compulsory. The usual charge for liners is Rs. 200·000. Tramp steamers pay about Rs. 100·000 extra.

The Custom-house charges on all vessels entering the port are :—

Hospital dues - Rs. 1·920 for each member of the crew.

Tax on vessels - Rs. 6·000 per mast.

Light dues, which have to be paid in gold, amount to Rs. 100·000, which, at the exchange of 27d., = £11 5s. There are no harbour dues levied on steamers which do not make use of the Dock Company's quays. Steamers going alongside the quay pay a wharfage charge of 700 reis per metre space of

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quay occupied per day, and Rs. 2·500 per ton of cargo discharged or received. The charge for stevedoring ranges from Rs. 1·500 to Rs. 2·000 per ton.

The charge for towing steamers from quay to stream, or *vice versa,* is Rs. 150·000 to Rs. 200·000, according to the size of the steamer. Movements of hulks, Rs. 50·000 each. The cost of hiring hulks is Rs. 50·000 per day, but these cannot always be obtained, as, owing to the facilities afforded to steamers making use of the quay, there is very little lighterage business done, and there are only two or three hulks left in the port.

There are five European banks in Santos, viz. :—

London and Brazilian Bank, Ltd.
London and River Plate Bank, Ltd.
British Bank of South America, Ltd.
Brasilianische Bank fur Deutschland.
Banque Française du Bresil.

and two native banks.

Quite a number of steamers visit the port, the following lines being represented from time to time, viz. :—

The Royal Mail Steam Packet Company.
Lamport and Holt.
The Pacific Steam Navigation Company.
Hamburg South American S.S. Co.
North German Lloyds.
Sloman Line.
Norton Line.
Société Generale du Transports Maritimes à Vapeur.
La Veloce Line.
Navigazione Generale Italiana.
Prince Line.

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Chargeurs Réunis.
Austrian Lloyds.
Compañia Trasatlantica de Barcelona, etc.

Immigrants arriving at the port are taken charge of by the Immigration Department, and sent up country to the depôt at Sao Paulo already referred to, or to some other district.

IMMIGRATION DEPÔT—SAO PAULO.

Santos has a population of about 45,000 inhabitants; it is the only sea outlet for the State of Sao Paulo, and the shipping port for Sao Paulo, Campinas (population 30,000), and other smaller towns up country, of from 5,000 to 10,000 inhabitants, such as Jundiahy, Sorocaba, etc.

Vessels go alongside the quay to the berth appointed by the docks company, and during the time they remain alongside are subject, as well as their crews, to the strict observance of the following rules, viz. :—

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a. Vessels are made fast alongside the quay in the presence of an employé of the Company, and are moored fore and aft. Particular care is to be taken to see that ropes are slackened at high and low water in such a manner as to never have them so tight as to cause damage.

b. Ships are responsible for any damage done in berthing.

c. All vessels are obliged to leave the quay when ordered by the Company, even before they have completed their loading or discharging, in the following cases.—

1. If by excess of shipping it is necessary to bring one vessel alongside another, and the one on the inside berth will not allow the cargo of the other to pass over her decks.
2. If it is necessary to bring any vessel alongside which has preferential cargo, such as urgent material for the Government, Dock Company or Railway Company, or in any special case.

d. When ordered to do so by the Company, vessels are obliged to immediately slacken their ropes to make room for another vessel coming alongside or leaving the quay.

e. No vessel, which is not either loading or discharging, will be allowed to anchor in front of the quay within a distance of 150 metres, the said space being reserved for the movement of vessels coming alongside or leaving

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the quay. This space is marked by a series of buoys.

f. To receive ballast, vessels must produce their respective licenses and documents proving payment of duties. They must take care not to let any portion of this material fall into the water, and they will be fined Rs. 100·000 should they persist in the non-observance of this rule.

g. Vessels are not allowed to throw overboard any cinders, sweepings, or anything which can affect the depth of water and health of the port, under a fine of Rs. 100·000.

h. The dock premises are closed from 6 p.m. to 6 a.m. the following morning, and no one is allowed to pass except in places appointed by the Custom House, and in the presence of the Custom House and Dock Company's guards.

Sundry other regulations as to the commencement of discharge, documents to be furnished, cranes, despatch, etc., exist, but a pamphlet is given to the captain of each vessel on coming alongside the quay, in which these are set forth in detail.

There are no actual docks at Santos, the quay before referred to being a continuous wall, abutting on the river. This quay is fitted with a large number of hydraulic cranes capable of lifting weights up to five tons, and there is a special crane for lifts not exceeding 30 tons. Vessels are loaded to a depth of 26 feet alongside the quay. Between the quay

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wall, which extends for 6,000 feet, and the bonded warehouses—of which there are 13—there are two lines of railway, so that cargo may be loaded and discharged direct into the railway trucks if necessary. The quay and sheds are lighted by electricity. The sheds are constructed of galvanised iron with projecting roofs, are well ventilated, and fitted with a large number of travelling cranes, capable of dealing with weights of one and a half tons. The dock company can discharge cargo at the rate of 150 tons per hatch per day.

Attached to the dock system there is a large engineering establishment, which is fitted with powerful machinery, and in which the dock company do all their own repairs.

Dredging operations are continually going on, the dock company having two dredgers, and nine steam hoppers for conveying the material to sea. They have also a graving dock on the north side of the river, but this is capable of dealing with small craft only. The dock company purposes extending the quay for a distance of nearly half a mile, to take in the shallow water below the town.

Between Santos and Sao Paulo there is a good railway service performed by the Sao Paulo Railway (an English Company), and which is provided with excellent rolling stock.

The river, we found, is not buoyed, excepting at the entrance and on one of the shoals, but it presents no serious difficulty to navigation, as there are plenty of landmarks, and a pilot is available at the entrance

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The lowest depth of water on the bar is four and a half fathoms, and in the channel five fathoms. The Cia Docas do Santos are under an obligation to remove all obstructions to navigation.

Messrs. Wilson, Sons & Co., Ltd. have a coal and ballast depôt on the mainland, opposite the docks, and can ship 200 tons of coal per day. They have four lighters, a large hulk and two steam tugs, both handy vessels. In making the port, commanders should hug the lights.

There is a fairly large passenger traffic between Rio de Janeiro and Santos, but the railway is principally used on account of the quarantine restrictions which the one port imposes against the other. The majority of the passengers would prefer to travel by steamer, as the railway journey of sixteen hours, with a change of carriage in the early hours of the morning, and a stay over at Sao Paulo, is a very tedious one to residents, especially in the hot season. Under the improved conditions of both ports, it is to be hoped that some way out of the quarantine difficulties—which are the bane of all South American ports—will be found. If the Governments will take the pains to discover who it is that reaps a profit out of the restrictions—and there must, we think, be someone—and then cut off all such emoluments, the public will be benefited, the ports popularised, and the Republics enriched.

Returning to Rio by rail, we had to commence the journey from Sao Paulo on the narrow gauge railway at night time, and found the carriages most

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inconvenient, stuffy and ill-lighted, candles only being used for the purpose. It seems the railway company contemplate laying down a broad gauge line, and will not in consequence spend any money on the existing line and equipment. Shortly before changing into the broad gauge sleeping car, we were privileged to witness a magnificent forest fire. It extended for about a mile, close to the track, and burnt most fiercely, sending up into the dark sky huge masses of flame, intensified at intervals by the fall of some of the forest giants. It was truly a grand sight. The lurid glare in the sky could be seen for miles after we had passed from the vicinity of the fire, and the loss of valuable timber must have been considerable. In all probability, however, the fire was intentional, as this method of clearing the ground for coffee culture is resorted to.

Shortly after our return to Rio we had occasion to visit Petropolis, or the 'City of Peter,' so named because it owes its foundation and development to Emperor Pedro II. The city has about 20,000 inhabitants, and is the seat of government for the State of Rio. During the days of the empire it was the residence of the court.

There is an excellent service of steam ferry boats across the harbour from Rio to the Leopoldina Railway station of Maua, whence the ascent to Petropolis by the Leopoldina Cog Wheel Railway is made. Short of a steam launch, these ferry boats afford the best means of seeing the harbour.

In Rio itself the National Parliament meets, but the city is considered neutral territory.

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Petropolis is about 2,000 feet above sea level, and the journey both up and down, including the trip across the bay, occupies about two and a half hours either way, and is most interesting and beautiful.

We had never seen so great a variety of trees together, and the only regret we had was that we could not give names to them all. The bamboos were of great height, and at some of the 'chacaras' in Petropolis we noticed the cane was used to form shady and pleasant avenues. There was quite a profusion of trees in flower and fruit, some with both on, and we cannot satisfactorily express our admiration of the many charming views this short journey afforded us. Starting from Rio there is only one train per day (at 4 p.m.), so that, excepting on Sundays, when the boat leaves for the station at 7 a.m., passengers for Petropolis have to stay there overnight. The city is situated in the midst of the Organ Mountains, and is 45 miles from Rio de Janeiro. It is quite German in appearance, has a large population of that nationality, and some of the Pensão and hotels are under German management.

There are rivers running through the main streets, with trees along their banks; and the place, being so well supplied with water, is beautifully fresh and clean. Flowers grow in abundance, and the most lovely hedges imaginable of roses, honeysuckle and wistaria were formed round the villas. The whole city seemed remarkable for the number of its beautiful houses, or one might reasonably say small palaces, built in the most ornate fashion, some with silvered

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railings and illuminated decorations on the outer walls.

It would have been a pleasure to stay at least a week at Petropolis, but the 'Oravia,' by which steamer we were to sail to Monte Video, having arrived in the harbour, our visit was brought to an end.

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CHAPTER X.

CATAMARANS. LIFE ON BOARD "ORAVIA." "WIND DOG." ALBATROSS. CAPE PIGEONS. MORE STORIES. DIFFERENCE IN TIME. CARNEGIE, MARK TWAIN, AND OTHER YARNS. FLORES ISLAND. QUARANTINE RESTRICTIONS. PAMPEROS DUCIE Y SECA. SOUTHERN CROSS. FLORES TO MONTE VIDEO AND BUENOS AIRES. RIVER PLATE.

WE left Rio de Janeiro in the 'Oravia,' at about two o'clock in the afternoon of the 26th of September, the weather being fine, but with a high sea running. There were several 'catamarans' outside the bay, the occupants of which were busily fishing. They did not seem to mind how rough the sea was, their rafts being perfectly safe, though to an onlooker they appeared very dangerous. At times, when a heavy wave passed over the catamaran, the heads of the fishermen only could be seen, and we frequently thought the men had been washed off their small perch, but, when the wave had passed, they were there, as an Irishman might say, like a fixture, but serenely following their occupation.

On board the 'Oravia' there was quite a merry party of British passengers, some bound for the River Plate, others for the Straits of Magellan and the west coast of South America. There was something pleasant going on each day: sports, tournaments of one kind and another, and in the evening music and dancing. The dance on the second night out from Rio was very well got up. The quarter deck was decorated with flags of all nations, and the electric lights were

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ingeniously arranged, Chinese lanterns being fixed round the several lights. All the passengers, both British and foreign, enjoyed the evening immensely, and it closed with the good old-fashioned dance of 'Sir Roger.' There was a fairly strong sea running all evening, and the difficulty of keeping one's legs gave rather a zest to the dance than otherwise.

The same evening there was visible in the sky what to all appearances was a square piece of rainbow, but the captain gave it its technical name of 'wind dog.' He said it was regarded as a sure sign of heavy weather, and he was of opinion that we would have a 'pampero' before morning. It certainly did commence to blow before midnight, and shortly afterwards it rained heavily, but the real article did not meet us until we arrived at Flores Island. It became colder also, and necessitated a turning over of boxes in the search for warmer clothing.

Hovering over the stern of the 'Oravia' was a splendid albatross, the first the writer had seen, and there were also a number of Cape pigeons closely following, and ready to pick up anything eatable which was thrown overboard. Some of the officers were of opinion that the albatross measured about 12 feet from tip to tip of its wings.

We were making too much speed to attempt to catch the Cape pigeons or the albatross with a hook and line. This is often done from sailing vessels, and indeed in the case of the smaller bird no hook is needed. A piece of stiff card at the end of a thin line is sufficient, as the card becomes entangled with the

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wings and the bird is easily drawn on deck. Once arrived there, it immediately becomes seasick.

The albatross surpasses all other birds in power and gracefulness of flight. It glides rather than flies, scarcely ever flapping its wings but sailing on ever, as Mark Twain observes, 'by the sole act of its unlorded will.'

Children at home, sometimes, are in the way and troublesome, but at sea, when one has the leisure to watch their antics and listen to their un-ending and puzzling questions, they are an interminable source of pleasure. One bright little youngster puzzled the captain by asking him what 'annoyed an oyster most?' and as he 'gave it up,' she replied with a twinkle, 'a noisy noise annoys an oyster most'; but the captain got his turn in asking, 'When did the fly fly?' This troubled the little mind somewhat, but it brightened up when the captain replied, 'when the spider spied her.' This small incident served to bring out a story from one of the adults. He had, he said, been down to Coney Island, on his recent visit to New York, and was induced by a friend to try his luck at 'Aunt Sally.' Aunt Sally herself, however, he said, must have gone out shopping, and left the babies to mind the house,—they were the most 'slippery' children to catch imaginable. They were bobbing up and down on wires the whole time, and both he and his friends used up all the sticks in the neighbourhood in the vain attempt to knock one of them over.

In the evening, in the hotel, his friend was writing a letter, and, as he looked very sad, he enquired as to

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the cause. 'Writing to the wife, dear boy, to say how I missed the children,' was the answer.

Just then eight bells sounded, and our New York friend, who carried two watches, took them out of his pocket and gave us the local and Greenwich time. At Rio de Janeiro there was a difference of three hours (slow), and the further west one goes, the loss of time increases until the 180th degree of west longitude, or the centre of the globe, is reached, when a whole day is lost. Going east there is a continuous gain, and the day lost by those going west is picked up by those going east.

An amusing story is told by Mr. A. Carnegie of some clergymen who were returning to America from the east, and in which case it is necessary, as a day is gained to have two days of the same date. The 180th meridian was crossed on a Sunday, and the captain, without thinking, called out to the chief officer to make another Sunday to-morrow. One of the clergymen was Scotch, and as Mr. Carnegie remarks, 'a Presbyterian at that,' 'Mak a Sawbath !—mak the holy Sawbath !—ma conscience !' The order had, however, gone forth, and two Sundays were observed, but the scandalised Scotch minister could never be reconciled to the captain who had presumed to have a 'holy sabbath of his ain making.' More amusing still is Mark Twain's description going west. 'To-morrow,' he writes, 'we must drop out a day, lose a day out of our lives—a day never to be found again. We shall all die one day earlier from the beginning of time we were foreordained to die. We shall be a day behindhand all through

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eternity. We shall always be saying to the angels "Fine day to-day," and they will always be retorting "but it isn't to-day, it's to-morrow." We shall be in a state of confusion all the time, and shall never know what true happiness is. Sure enough it has happened. Yesterday it was September 8th, Sunday—to-day per bulletin board at the head of the companion-way it is September 10th, Tuesday. There is something uncanny about it and uncomfortable—in fact, nearly unthinkable, and wholly unrealisable when one comes to consider it. While we were crossing the 180th meridian it was Sunday in the stern of the ship where my family were and Tuesday where I was. They were there eating the half of a fresh apple on the 8th, and I was at the same time eating the other half of it on the 10th, and I could notice how stale it was already. The family were the same age that they were when I left them five minutes before, but I was a day older now than I was then. The day they were living in stretched behind them half way round the globe, across the Pacific Ocean and America and Europe: the day I was living in stretched in front of me around the other half to meet it. They were stupendous days for bulk and stretch, apparently much larger days than we had ever been in before. All previous days had been but shrunk-up little things by comparison. The difference in temperature between the two days was very marked—their day being hotter than mine because it was closer to the equator. If the ships all moved in the one direction—westward I mean—the world would suffer a prodigious loss in the matter of valuable time through the dumping

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overboard on the great meridian of such multitudes of days by ships' crews and passengers. But, fortunately, all the ships do not sail west: half of them sail east, so there is no real loss. These latter pick up all the discarded days and add them to the world's stock again, and about as good as new, too, for, of course, the salt water preserves them.'

One of the officers on our ship told us a story drawn from his own experience when sailing from 'Frisco to the Antipodes. It seems there was a missionary on board, who ventured to ask one of the navigators how he knew when to put on a day and when to take it off. The officer, who was quite equal to the occasion, promptly replied that the spot was properly buoyed, and he promised to show the missionary the next buoy. In the night time the joker painted a barrel red, threw it overboard later, and got the missionary up in the very early hours of the morning to see it. The latter duly entered in his notebook an encomium on the wonderful progress science was making, and the admirable manner in which its followers were, at all costs and risks, marking out paths of light in the trackless ocean, by which even the ignorant wayfarer might be guided and instructed.

As plague existed at Rio de Janeiro when we left, we quite expected that we should have to pass from 24 to 48 hours at the lazaretto on Flores Island before being allowed to land at Monte Video, and we were not disappointed. We arrived there on a Saturday afternoon, and the island, with its lighthouse and group of buildings, looked almost pleasant from the ship, and

NOTE.—Quarantine has now been done away with by the Uruguayan Government.

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we went on shore in bright sunshine with the feeling that the discomforts of the place must have been very much over-rated. The building, or 'hotel' as it is called, is divided into three 'cuerpos' or divisions for first, second and third class passengers. We were quartered in No. 3—the first class division—though in the sheds in the courtyard a ship's crew was housed. The sailors slept on benches, with no covering but their own clothing, and the windows of the buildings, for the most part, were filled in with old sacks. There were two floors in our cuerpo. On the ground floor there were a number of bedrooms and a rough dining room, the walls being covered with common plaster, and the floors with dirty boards, and there were plenty of rats and 'bichos' for company. Above were the best bedrooms, and sanitary arrangements of the most primitive order. Now, it seemed to the writer that by a little expenditure on the part of the Uruguayan Government, the visit to Flores Island could easily be made a pleasant episode instead of being the reverse. A fair rate is paid for the accommodation and food, and the majority of passengers would willingly augment the payment if the existing discomforts were done away with. There is plenty of room on the island for the accommodation and good treatment of passengers, and it is quite time, if these antiquated and annoying quarantine restrictions cannot be dispensed with altogether, that some action should be taken to bring about a better state of affairs. The opening of one's packages in the field adjoining the fumigator, whether during rain or shine, and in the presence of

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one's fellow passengers, is, to say the least, trying. It was more than that on the day we went through the process, as we had a 'pampero ducie' to contend with, and some of the ladies sat down on their trunks and wept. Now, a light shed would have obviated this difficulty, and something requires to be done to improve the system of fumigation, if indeed it cannot be improved altogether off the face of the earth. There should be no spoiling of clothes and boots, and if these are spoiled the government should pay for the damage. The pleasures of the island are found in fishing from the rocks; watching the army of umbrella ants, marching in regular order; catching rats, and evidently in writing what goes by the name of poetry. Sorrows, equally with joys, seem to affect the poetic muse and compel her to action. The following specimen we found the ladies of our party copying out for their albums, and you can judge of its merits. Whatever it may lack in poetic conception, it possibly makes up in truth.

ISLA DE FLORES.

If you want to be cheery and gay,
Just go to M.V., *viâ* Flores:
The hotel makes a charming display,
And the guests are full of 'bright' stories.

There's hunting for sport, but its '*flea*-ting,'
And other such kindred delights;
And the sheets for damp take some beating,
Not to speak of the comfort of lights.

The walls are adorned with white plaster,
Bedecked with the weepings of rain,
And the waiting really is faster
When enlivened by prospective gain.

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When your wits get sharpened by waiting
Your portmanteaux and boxes to see
Unspoiled by the long fumigating,
You may possibly learn how to fee.

The 'Official helps' are not greedy,
You need not pay more than gold tips
To get them to work bland and speedy,
Their famed records for speed to eclipse.

To these charms add a rain squall or two,
To wet your room and your baggage;
And to give you a taste of the 'flue,'
And add to your choice of good language.

Fairest Isla de Flores! sweet name,
Sweet as the charms you discover;
I am longing for leave to go home,
And remain in charge of my mother.

There are two hospitals and a cemetery on the Island, but these are well removed from the 'hotel.' Given fine weather, however, clean quarters and an improved diet, the stay on the Island would be restful instead of irritating, and the authorities should have outside Governmental pressure put upon them to rectify the existing evils, and give a good first and lasting impression of the Republic of Uruguay. The Governor was as attentive to us during our stay as his power admitted, but we believe that he would agree that an establishment of the kind in question will never be satisfactorily conducted unless all idea of profit, at all events large profit, is done away with.

We, unfortunately, were treated, as already named, to a 'pampero ducie' during our short stay on the Island.

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The rain came down in sheets, flooding the whole of our 'cuerpo,' bedrooms included. We had never seen anything to equal this, and the thunder and lightning accompaniment was both awful and grand. This was followed by a 'pampero seca,' and the violence of the wind was such that we feared some serious damage to our sheltering building, and possibly worse to ourselves. Happily nothing beyond the blowing down of a few doors, and some resultant bruises, can be recorded.

The 'pamperos' come from the pampas of South America, where the hot air accumulates, and is relieved by violent rain or windstorms. Of course we had a good expanse of water between us and the mainland, or we might readily have suffered worse than we did. T. A. Turner, in his 'Argentina and the Argentines' writes:

'Who has not heard of that scourge of the plains, 'that scavenger of the towns, the life-giving, death-'dealing pampero? That mighty wind which sweeps, 'unopposed by mountain or hill, over the dreary 'wastes of Patagonia, over leagues of tall grass 'of the Pampas, over the desolate plains of Buenos 'Aires; gathering force with its increasing velocity, 'driving before it myriads of insects and queer-'winged things, and clouds of dust that sometimes 'turn day into night; sweeping down in all its 'fury upon the great, shallow Rio de la Plata, 'delving into its broad bosom, banking up its 'waters, driving this way and that; flooding the 'Boca, the Ensenada, the Tigre, the Northern,

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'the Southern, the Pacific, the Rosario Railways;
'tearing up the port works, and undoing in an
'hour the work of months; arresting the flow of
'the mighty Parana, forcing back upon the littoral
'that overflow greater than the Mississippi, and,
'lashing the widening river till huge steamers rock
'like corks, speeds on to Monte Video and the
'mouth of the Plate, without harbour or even break-
'water to oppose its terrible power; down upon
'the unprotected shipping, dashing the lighter craft
'shorewards, making matchwood of some, com-
'pelling larger vessels to cut their cables, and scud
'under bare poles for hundreds of miles before it;
'and so sweeps over the ocean, till it meets and
'spends its last force against the Trades.'

We witnessed something of this, and I think we were all glad to be in the refuge of Flores Island, rather than on board the Steamer. On shore the 'pampero' is quite as much dreaded as at sea, and the destruction of cattle which follows is enormous. During the 'pampero,' the 'Oravia,' bound for Valparaiso, stopped off Flores Island to enable the purser to bring our letters on shore, and a kind-hearted passenger managed to come with him, wrapped up in a suit of sailors' overalls, in the ample folds of which, despite the teeming rain, he managed to conceal a couple of bottles of prepared 'cocktails' for the benefit of one or two of his friends in durance vile. The eyes of the whole of the inhabitants of the Cuerpo were on those bottles, and as the recipients went out, braving the tempest, for a few moments to see their

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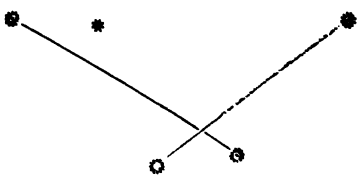
friend off, something mysterious happened to the cocktails, as the empty bottles only could be found later. Meanwhile an order came in for all the baggage to be reopened, as one of the passengers had given notice to the Governor that he had lost his trousers. They were, I believe, his Sunday ones, as he was certainly not going about in kilts, and he made such a hullabaloo about them. We don't know if he ever found them, but some of the passengers offered to subscribe for a pair rather than go to the trouble and annoyance of opening all trunks again in the pouring rain. At Flores we got our first sight of the celebrated though much derided Southern Cross. Certainly one is disappointed at first. Why, it is difficult to say exactly, unless it be that the X is not quite a X, but requires a little imagination to fill up the figure. Mark Twain is, however, a little severe on it when he says it does not suggest a cross nor anything in particular, unless a line be drawn from star to star. He even goes so far as to suggest it should be called the Southern Kite. He describes the cross thus. 'The cross is not large. It consists of four large stars and one little one. The little one is out of line, and further damages the shape. It should have been placed at the intersection of the stem or crossbar.'



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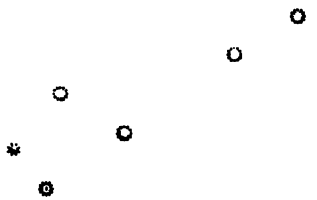
He has, however, missed the point, and I might also say the 'pointers.' Of course he may have done so intentionally, to give point to his joke, but as a matter of fact it is not the perfection of the cross or its brilliancy which gives it its notoriety. For a North American, or a voyageur from Northern Europe to say that he has seen the Southern Cross denotes that he has travelled, don't you know, as the famous cross can only be seen in southern latitudes, and further, what is of real importance and value is the fact of its unmistakeability. It has two pointers which cannot be mistaken, and therefore it is of great service to the mariner. To us on Flores Island it appeared :



During the many nights we spent at sea in southern latitudes, the cross was always a source of pleasure to us. We were naturally continually changing our position, but we could always find the cross. Sometimes it appeared to be just emerging from the sea, at others it was directly overhead, or to our left or right, according as we moved from port to port. It became to us like an old friend, and seemed to relieve the solitude of the wide, wide sea, the mere name of 'cross' being linked with our earliest memories with thoughts of fellowship, love, and safety.

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We landed on Flores on a Saturday afternoon, and shortly before four o'clock on the Monday afternoon we got our *congé*. A steam tug was in readiness to convey us to Monte Video, sixteen miles distant, and we were not sorry to embark, although it is somewhat of a rough journey on a small tender. On account of the heavy weather frequently prevalent in the River Plate, off Monte Video, it is not possible to get alongside a steamer in a large tender without risk of damage, and so one has to put up with the inconvenience of a small one.

When the projected docks at*Monte Video, however, are completed—and these are now making fair progress—all this inconvenience will be obviated, and no doubt some up-to-date and comfortable arrangements on the mainland, or within the precincts of the port, will be made for those who may have to undergo quarantine. Usually, to obviate quarantine, a ship must have left the infected port eight days previously, and the Pacific Company have wisely arranged, when quarantine is imposed—though this is of less frequent occurrence than was the case a few years ago, and as the steamers carry a sanitary inspector, the time has been reduced to a day—to take passengers, for a small additional fare, on to Punta Arenas, in the Straits of Magellan, and transfer them there to the homeward steamer. They can then land at Monte Video without trouble, and will have had in addition a view of a portion of the famous Straits—really one of the most beautiful parts of the world.

As our more important business lay in Buenos

*The P.S.N.C. Steamers now make use of the inner harbour at Monte Video, so that passengers can be landed at Monte Video or transhipped for Buenos Aires in smooth water.

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Aires, we determined to go on without delay from Monte Video by one of the river steamers which leave there every evening. These river steamers are really splendid,—simply floating hotels, well managed, and very comfortable. The saloon of the 'Eolo,' by which boat we travelled, was beautifully decorated with flowers, and there was a 'buttonhole' for every passenger. The dinner was well chosen and equally well served, and the staterooms were all one could wish. The one regret we had was that we were compelled to make the journey at night time.

The width of the estuary, from Monte Video to Point las Piedras on the Argentine coast, is 53 miles, whilst at its mouth, say from Cape St. Mary in Uruguay to Cape St. Anthony in the province of Buenos Aires, the width is 150 miles. In fact, the River Plate can scarcely be called a river, it being, more properly speaking, the broad estuary formed by the waters of the rivers Parana and Uruguay.

We arrived in Buenos Aires early on the Tuesday morning, and proceeded straight into dock,—the troublesome system of landing which obtained a few years ago being now entirely done away with.

We were up betimes to catch a first glimpse of the Empress City of the South, the 'Athens of South America,' extending for four miles along the right bank of the river, and covering an area of about six square miles, and were not disappointed in our expectations.

We must, however, leave our impressions of Buenos Aires itself, what we learned as to its trade and future prospects, and its docks, &c., for another chapter.

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CHAPTER XI.

BUENOS AIRES. SOUTH AMERICAN MANNERS. PART PLAYED BY GREAT BRITAIN IN ARGENTINE HISTORY. FACTS AND IMPRESSIONS *RE* PORT AND DOCKS OF BUENOS AIRES. RAILWAYS. TRANSANDINE RAILWAY. IMPORTS AND EXPORTS — MEAT — BUTTER — LIVE STOCK. GRAIN PRODUCED IN ARGENTINA. URUGUAY AND CHILE. VISIT TO CAMPANA.

AT the time of our visit Buenos Aires was reputed to have *1,000,000 inhabitants, or, say, one-fifth of the entire population of the Republic, and there is always in addition a large floating population. The city is beautifully clean, although the outskirts are badly paved, and the roads leading to the city, being devoid of stone, are very muddy and disagreeable.

PLAZA VICTORIA—BUENOS AIRES.

All stone used in the city is imported from a considerable distance. The streets, excepting the Avenida de Mayo, which is like a Paris boulevard, are very

*The population in March, 1907 was 1,095,411.

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narrow, but arranged in a regular fashion similar to those in a North American city. Handsome shops and elaborate private houses, adjoining each other, line the streets, and there is an excellent system of tramways, both horse and electric. The houses each have a 'patio,' or courtyard, open to the sky—some with a fountain in the centre, and all more or less ornamented with plants—and the patio always forms a cool and pleasant retreat. South American houses have so often been described that we do not purpose entering into detail regarding them. They are built, naturally, to suit the climate and habits of the people, and are the result of experience. We may prefer our own style—most people do—but surrounding conditions and traditions have to be respected, and really if we had to move into a foreign country, and settle down there, we would soon learn to appreciate and prefer what we might, on shorter acquaintanceship, possibly consider inferior to what obtains in our own country. The natives we had the pleasure of meeting were extremely polite, in fact it is but the natural Spanish custom to be so. A steamer was placed at our disposal for a survey of the River Uruguay, and a four-in-hand to drive about in, and in these cases undoubtedly the offers were *bonâ fide*. We, however, declined with thanks, as we had no time for the one, and the other, not being experienced 'whips,' might have got us into trouble. When, however, one is presented with a house and other valuable property, the politeness, viewed from a British standpoint, becomes extreme, and whenever anything takes that

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form it loses, we think, its reality and charm. We mean no offence to our kind friends by this, but are simply contrasting the different views which one nation takes of the mannerisms of another. One thing in particular we regretted to notice, both from press statements and otherwise, was the fact that the British are not liked at Buenos Aires, though the St. Andrew's Society there seems ever to give a good account of itself, and to keep 'merry' under all circumstances, no matter how depressing these may be. We don't think we merit any hatred from any of the South American Republics, considering what we have done in the matter of providing capital for the development of their resources, and ships for the exchange of commercial commodities. Possibly the recollection that the Argentine Republic was within an ace, at one time, of falling under British control, may have something to do with the feeling, though the fact that the British were defeated in that object should have effaced any bitterness in a nation which has so many charming manners. We must confess that we had no idea of the part Great Britain had played in the history of Buenos Aires until we read Sampson's interesting work entitled 'In the Dictator's Grip.' 'General Beresford,' he says, 'landed on June 25th, 1806, a little to the south of Buenos Aires, with only about 1,600 men, and marched upon the city. Next morning, at daybreak, they met the Spanish forces, which had come out during the night to defend the place, but they were easily routed, and the next day they took the place. The 71st Highlanders led the van.' 'The Spanish

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flag,' he adds, 'was first raised on the same spot as the British in the same month 226 years before. The British secured booty to the amount of £300,000 in gold and silver. Buenos Aires had then about 60,000 inhabitants. Beresford reduced his garrison by sending home about two hundred marines with the treasure, and on the 11th of August he heard that an army of 4,000 men was marching against him. On the 12th they opened fire, and the British were defeated.'

Our business, however, is not to write or quote history, unless it be of trade, and we must therefore return to our own special task.

There is very little rise and fall of tide at Buenos Aires, so that the outer basin is always open to the river, but ships often ground prior to arriving at the port, as the water is cut considerably by north and north-westerly winds, which frequently prevail. The South Channel is said to have 18 feet of water, and the North Channel 21 feet at ordinary low tides. The cutting of the water, however, by the winds referred to, varies this. Ships drawing more than 21 feet have often to wait many days for sufficient water to enter or leave. Constant dredging is going on, and it is hoped that a deep channel will be soon maintained in order that the docks may be used to their full extent. There is a depth of 23 feet of water in the docks, and since writing the foregoing it has been announced that a 23-feet channel has been dredged.

The Madero Docks have an average length of over 2,000 feet and a breadth of 325 feet, with a depth

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of 23½ feet; the locks have a breadth of 66 feet. The South Basin has a length of 3,600 feet, breadth 385 feet, and the North 1,465 feet and 1,135 feet respectively. On the North Basin there is a 30-ton crane. The dry docks (two) are entered from this basin, and are of the following dimensions:—The large dock, length 585 feet, breadth on bottom 89 feet 6 inches, breadth of gates on top 65 feet. The small dock, length 477 feet 6 inches, breadth 64 feet 3 inches, depth on sill at zero 20 feet. Nos. 1 and 4 docks, on their east sides, have cattle berths, where all live stock is shipped, and the whole of the docks on the west side have good warehouse accommodation. They are connected with all the railways, have hydraulic cranes for discharging and loading cargo, and electric light on the quays to facilitate night work. The South Basin, on the west side, has good warehouses, alongside of which river passenger steamers are berthed.

The Boca commences from the west corner of the South Basin, and has quays on the north side as far as Barracas Bridge. Abreast of the quays are large warehouses and deposits for timber (foreign and native), coal, iron, &c., also steam sawmills. On the south side, near the entrance, adjoining Dock Sud, there is a large engineering and ship repairing yard. On the wharf of the Southern Railway there is a grain elevator, and for a mile further various ship-building and repairing works, and timber deposits. A little below Barracas Bridge stands the great Produce Market, one of the largest in the world.

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Above Barracas Bridge is the large frozen meat establishment of the Compañia Sansinena de Carnes Congeladas. There is another dock, known as the South Dock, and which was commenced some seven or eight years ago, but is not yet completed.

Every trader or merchant in Buenos Aires must annually pay the licence corresponding to the class of business in which he is occupied. Those about to commence business in that city, or to make use of the port, should refer to 'Grant's Argentine Commercial Guide,' which contains excellent notes on the laws, customs, charges, etc., of Buenos Aires.

Our personal impression of the docks after steaming through them was that they were well equipped, and though very empty, the warehouses on the quays were substantial and well arranged. There are plenty of tugs, lighters, and some excellent coaling depôts, one of which, belonging to Messrs. Wilson, Sons & Co., Ltd., we inspected. Their wharf is on the north side of the south basin of the dock system, and they have accommodation for the storage of some 50,000 tons of coal, and facilities for the shipment of same into flats and steamers alongside, though steamers are usually coaled from lighters whilst discharging.

Tugs are necessary when docking from the south, as there is an awkward corner entering Dock No. 1.

There is no doubt that the Argentine Republic is bent upon extending its trade and commerce. There are nineteen railways, all of which, either directly or indirectly, communicate with Buenos Aires. The number of miles now open is about 10,000, and the

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railways are being continually extended. These lines are :—

(*a*). ARGENTINE GREAT WESTERN.—From Villa Mercedes to Mendoza and San Juan. Connects with Buenos Aires and Pacific Line (*d*), National Line (*i*), and Transandine.

(*b*). BUENOS AIRES GREAT SOUTHERN.—From Buenos Aires to Bahia Blanca and Neuquen. Connects with ports La Plata, Bahia Blanca, Necochea and Mar del Plata. Connects with Western Line (*e*) and Bahia Blanca and North Western (*h*).

(*c* & *f*). BUENOS AIRES AND ROSARIO.—From Buenos Aires to Santa Fé and Tucuman. Taps the ports of Campana, Zarate, San Pedro, Boradero, Ramallo, San Nicolas, Villa Constitucion and Rosario. Connects with Central Argentine (*f*), and is really now united with it, National Provincial Lines and all others running into Rosario.

(*d*). BUENOS AIRES AND PACIFIC.—From Buenos Aires to Villa Mercedes, where it joins the Argentine Great Western (*a*), and National Andine (*i*). Also connects with Villa Maria and Rufino and Central Argentine (*f*).

(*e*). BUENOS AIRES WESTERN.—From Buenos Aires to Toay. Connects with ports La Plata and Bahia Blanca. Also connects with Bahia Blanca and North Western (*h*) at Toay, with Central Argentine (*f*) and Great Southern (*b*).

(*f* & *c*). CENTRAL ARGENTINE.—From Buenos Aires to Rosario and Cordoba, touches ports of Rosario and San Nicolas. Connects with Oeste, Santafecino

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(*f*), which they have just bought, Buenos Aires Western (*e*), Buenos Aires and Pacific (*d*), Santa Fé and Cordoba Great Southern (*g*), Central Cordoba (*m*) and others running into Rosario (*see c*).

(*g*). SANTA FE AND CORDOBA GREAT SOUTHERN. —From Villa Constitucion to La Carlota. Forms feeder to the Buenos Aires and Rosario (*c*), to whom it now belongs.

(*h*). BAHIA BLANCA NORTH WESTERN.—From Bahia Blanca to Toay, where it connects with Buenos Aires Western (*e*). At Bahia Blanca connects with the Great Southern (*b*).

(*i*). NATIONAL ANDINE.—From Villa Mercedes to Villa Maria. At former place joins Buenos Aires and Pacific (*d*); at latter Central Argentine (*f*).

(*j*). OESTE SANTAFECINO, SANTA FE WESTERN RAILWAY.—From Rosario to Santa Fé Colonies. Now forms part of Central Argentine System.

(*k*). EAST ARGENTINE.—From Concordia, River Uruguay, along the river to Monte Caseros and Paso de los Libres. Branch line to Mercedes.

(*l*). CENTRAL ENTRE RIANO (ENTRE RIOS CENTRAL).—From port of Paraná (River Paraná) to Port Uruguay (River Uruguay), with branches to Gualeguay and Gualequaychu.

(*m to q*). CORDOBA LINES.—Practically one system and offshoots. From Rosario to Cordoba and Tucuman, junctions with Central Argentine (*f*) and Buenos Aires and Rosario (*c*), also with National Provincial Lines.

(*r*). CENTRAL NORTHERN.—Is a National line.

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From San Cristobal to Tucuman. Connects with National Provincial Lines.

(*s*). ARGENTINE DEL NORTE (NORTH ARGENTINE). —Forms part of Central Cordoba system.

We travelled over the lines to La Plata, Bahia Blanca, Campana and Rosario, and found the train services well conducted, and the dining and sleeping arrangements almost as good as in the United States. There appeared on all sides to be ample room for the development of trade, especially on the southern route, but we propose to deal with these journeys later, when treating of the ports mentioned.

In naming the Argentine Railways as above, we have intentionally omitted the Buenos Aires and Transandine Railway as meriting a special reference, not on account of its present importance, but of the great future awaiting its completion. The intention is to connect Buenos Aires with Valparaiso, and for this purpose concessions were obtained by Messrs. J. E. and M. Clark & Co., from the Argentine and Chilian Governments, for the construction of a metre gauge line from Mendoza to the summit of the Cordillera de los Andes, *via* the Uspallata Pass, to Santa Rosa de los Andes in Chile. The works were begun in 1887, and early in 1891, the first four sections—Mendoza to Uspallata, situated in the central valley between the main Cordilleras and the Paramillo range, 92 kilometres—were opened to public service. In 1892 the fifth section was opened to traffic to within 1½ kilometres of Punta de las Vacas, 143 kilometres from Mendoza. On the Chilian

NOTE.—The Argentine Railway system in 1904 had a length of 12,000 miles. The extent of new lines under construction is 1529.

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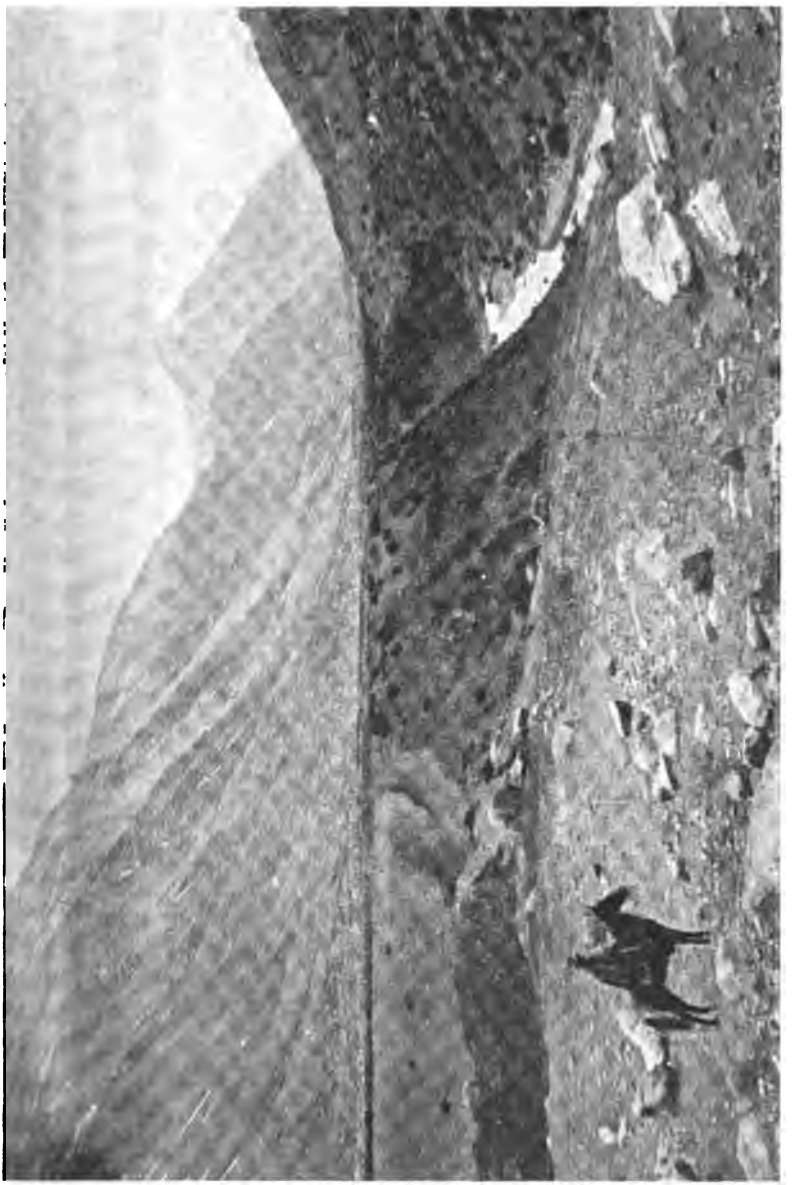

VALLEY DEL INCA—TRANSANDINE ROUTE.

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side the works have been carried up to Salto del Soldado, 27 kilometres from los Andes. To make the through connection some 73 kilometres of line remain to be constructed. From Mendoza to Punta de las Vacas, the journey is accomplished in about eight hours, including a stoppage at the Rio Blanco for breakfast. From Punta de las Vacas the journey may be continued on mules, and partly by coach, to Puenta del Inca or Cuevas, from which places Valparaiso or Santiago can be reached on the following day, the journey between Mendoza and Santa Rosa de los Andes occupying a couple of days. The whole journey between Buenos Aires and Valparaiso may, in this way, be done in about four days. The total length of the Buenos Aires and Valparaiso Transandine Railway is 110 miles, and of the corresponding Chilian line, 43 miles. We decided not to make use of this route, as to do so meant that we should have had to give up a voyage to the Falkland Islands, and through the famous Straits of Magellan and Smyth Channel, and subsequent experience proved that we had made a wise choice.

The Andes route is open from November to April, *i.e.*, during the South American summer. A good supply of warm rugs is a necessity for the journey, as, whilst the days are warm, the nights are invariably cold. This route is, of course, quite available for men who can rough it, but for women and children it will not, from all we learned, be suitable until the entire line is completed. Only a small quantity of luggage should be taken, as each pack

NOTE.—The Chilian section is now completed to Portilla—the mouth of the tunnel.

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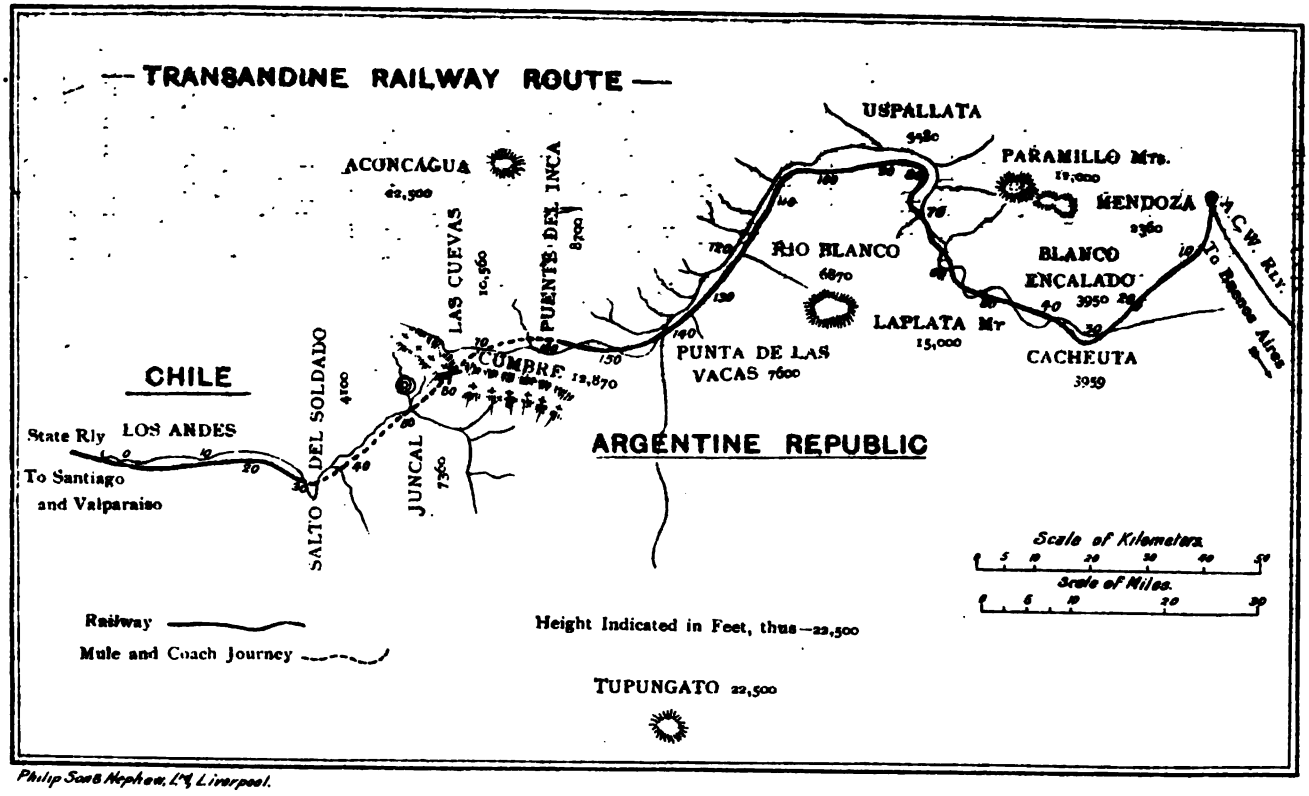

Philip Sons & Nephew, Ltd, Liverpool.

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mule load is limited to 50 kilogrammes. Whilst at Buenos Aires we heard a great deal about Mendoza as a health resort, especially for those suffering from pulmonary disease. There is scarcely any rainfall, and the distance from either the Atlantic or the Pacific Ocean, ensures dryness of atmosphere. There are also thermal springs at Puente del Inca, celebrated for the cure of rheumatism and skin diseases, so that the district should, in course of time, become renowned, especially when it is borne in mind that visitors from Europe have the advantage of an excellent and most interesting sea trip. Next time we go to South America, if ever that should be, we mean to travel *via* the Andes, though we shall endeavour to fix the time to avoid the snowstorms and other troubles, which at intervals make that route both difficult and dangerous.

Owing to the large population of Buenos Aires, and its importance as a distributing centre, the import trade of the district is 89·2 per cent. of the whole import of the Republic, and the export trade 69·5 per cent. of the total export.

The imports consist principally of live animals (for stock purposes chiefly), foodstuffs, tobacco, drinkables, textiles, oils, chemical products and drugs, colours and paints, wood and wooden articles, paper, leather, iron and other metals, stones, minerals (including coal), glass and china, &c. The coal imported amounts to about 1,000,000 tons per annum.

According to the Consular Report for the year 1901, the export trade to the United Kingdom was

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valued at £5,984,150, and consisted of horses, cattle, sheep, bones, frozen beef and mutton, hair, hides, skins, wool, tinned tongues and other meats, glycerine, butter, tallow, bone ash, guano; also cereals—such as canary seed, oats, barley, rye, linseed, maize, hay, turnip seed, wheat, pollards—sugar, bran, oilcake, cedarwood, quebracho, &c. Except to South Africa, there is no trade to the British colonies. The export to South Africa has consisted of animals and cereals, and was in 1901 of the value of £578,251.

We now come to the important question of shipments of meat, butter, and live stock. Owing to the importation of live stock into the United Kingdom having been stopped, in consequence of foot and mouth disease, the trade at the time of our visit was undergoing considerable change, and attention was being paid to the questions of chilling and refrigeration. During 1899 1,934,564 frozen wethers were shipped to the United Kingdom from Argentine ports. Live wethers shipped during the same period were 406,808, and live bullocks 88,717. There were apparently no shipments of beef during the year, although several experimental shipments have been made since, some with satisfactory results, and others the reverse. The difficulty in regard to beef is that chilled beef brings a higher price than frozen, and it has not been considered possible to carry chilled beef for more than eighteen days without serious risk. Chilled beef has, however, been carried for the River Plate Fresh Meat Company, and has turned out in perfect condition after a voyage of twenty-six days. There is no doubt that

NOTE.—The total value of the imports into the Argentine Republic in 1904 was £37,461,193, and of the exports £54,831,505.

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the River Plate will, before long, prove to be a very serious competitor of the United States, as the South American cattle appear to be finer and better fed than those from North America.

The three principal firms in Buenos Aires engaged in the frozen meat trade are—Messrs. Sansinena & Co., The River Plate Fresh Meat Company, Ltd., and Messrs. Nelson (Las Palmas Produce Company).

We visited the establishments of the two first-named companies, the one situated at Barracas on the Riachuelo, and the other at Campana, and the feeling prevailed that there would be a change in the mode of conducting the trade, and that much greater prominence than hitherto would be given to the shipment of frozen mutton and beef, and chilled beef. In the Consular Report for 1901, it is stated:—'Amongst new branches of trade inaugurated last year has been that of chilled beef. The idea aimed at in this is to maintain the atmosphere in which the meat is kept at such a temperature that the meat will keep fresh until placed on the market, avoiding, however, actual freezing. It appears that the freezing of beef reduces the juices to particles of ice, and the solid matter is incapable of re-absorbing the juices when subsequently thawed. Consequently, the liquid resulting from particles when thawed drains away, and the meat deteriorates. The chilled meat process, when employed on board ship, requires more attention than the old process. The first regular shipments commenced in August, 1891, from which date up to the end of 1901 24,700 quarters have been sent. The results obtained

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have been satisfactory, the chilled meat selling at about ½d. per lb. more for fore-quarters, and 1d. per lb. for hind-quarters than the frozen article.'

There is a tax of 0·85 cents. per carcase in Buenos Aires, if slaughtered for home consumption, but no tax is imposed if for export.

Chilled beef has to be hung up in the steamers' holds, and there must be a certain free space around it, *i.e.*, it cannot be stowed in the same manner as refrigerated meat, and, consequently, the question of lost space is a most important one to the steamship owner. The ratio of space required to carry chilled beef as against refrigerated meat is as seven is to three.

River Plate mutton brings about ⅛th of a penny per pound more in the market than Australian mutton, but it is not equal to the New Zealand meat.

The Sansinena Company are the largest killers and exporters of meat in the Plate, and they expected, at the time of our visit, that their figures for the year would reach the respectable totals of 1,000,000 sheep and 25,000 bullocks. When working at full pressure their slaughtering capacity is 100,000 sheep per month and 150 bullocks per day, which, after being dressed, are passed into the large refrigerators pending shipment for Europe. The Sansinena Establishment is situated about two miles from the docks, and to convey the carcases from the cold stores to the Boca, where the ocean steamers are berthed, the Company has two steam lighters fitted with refrigerating plant, each capable of taking nearly 2,000 sheep carcases. It is

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most instructive, though somewhat repulsive at first, to go through the slaughtering establishment and witness the several processes, which are carried out with the greatest cleanliness and regularity, each man having his own particular work assigned to him, and the whole building being fitted with appliances for the rapid handling of the carcases. Nothing is wasted. There is machinery for extracting stearine (used in the manufacture of candles), and oleo palmitina, a form of dripping used for culinary purposes, and in which a large local trade is done, also an export trade to the Brazils.

The works of the River Plate Fresh Meat Company at Campana, we found, were very similar to the Sansinena premises, though newer. The company has a wharf on the River Paraná adjoining their works, and the steamers go alongside. This company favours Haslam's system of refrigeration.

On the 31st December, 1906, there were fifty steamers engaged in the River Plate trade fitted with refrigerating machinery, having a total capacity for 3,039,000 carcases of mutton of 56lbs. each, and the number has since been somewhat augmented.

River Plate frozen beef is a little over 1½d. per lb. less in value than United States chilled beef.

The meat trade of the several supplying countries fluctuates on account of drought, though this applies principally to Australia, and no doubt the Australian supply will be largely drawn upon by China in the near future.

It is said that the grazing lands of the River Plate

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can produce stock more cheaply than North America, on account of the great advantage of a more temperate climate—extremes of heat and cold being practically unknown—no hand feeding being required during the winter season, and no droughts of long duration occurring, as in Australia, to cause unexpected havoc amongst the herds and flocks.

The docks at Buenos Aires and La Plata are now provided with the needful appliances for loading the animals on shipboard quickly.

The total number of cattle in the Argentine territory is estimated in round figures to be 33,000,000 and sheep 85,000,000.

The demand for frozen meat in the United Kingdom slackens off in the autumn.

Liverpool is the head-quarters for the distribution of River Plate meat imports, though London, Cardiff and Newcastle are freely availed of, and occasionally Hull, Southampton, Manchester and Glasgow.

The River Plate mutton trade shewed only an increase of 21,040 carcases in 1899, as compared with the previous year, or less than one per cent., while the normal rate of increase on previous years was 10 to 15 per cent. Three facts were given in explanation of this, viz.:—First, mishaps to steamers; secondly, increased output of beef; and thirdly, freezing works under repair.

The three River Plate Companies already referred to have a total freezing capacity of about 13,000 56-pound carcases daily, and a storage capacity of 285,000 carcases, or say a freezing capacity in the year

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of 4,745,000 carcases. Other companies have been and are being formed, so that there should be a great development in the trade.

There is practically no trade in lamb, New Zealand taking the lead, the figures for 1906 respectively being :—

New Zealand	2,386,829	carcases.
Australia	1,173,896	,,
River Plate	120,106	,,

The River Plate frozen beef trade has, since 1890, increased from 5,950 quarters to 1,314,703 in 1906, but it cannot compare in any way with the United States chilled beef trade, which has reached the magnificent total of 2,756,796 cwts. The importation of chilled meat from the Plate into Great Britain has risen from 10,337 quarters in 1890 to 454,613 in 1906. The one great advantage which the Argentine possesses over its Australian and New Zealand competitors in the meat trade is that of being nearer the final market.

In addition to refrigerated meat, we may add that 46,751 cases of butter were shipped from the Argentine to the United Kingdom. It is shipped usually in boxes of about 50 to 60 lbs. each, and during the Argentine summer months only, as the local demand in winter exceeds the supply.

The foregoing facts and statistics will give some idea of the magnitude and importance of the meat and butter trades, and naturally there is also a large and important business in wool. There are magnificent wool warehouses in Bahia Blanca, and periodical sales

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are held there, which are attended by buyers from all parts, though, from what we could gather, chiefly from France.

The grain trade of this agricultural and pastoral country is one of very great magnitude, though it is attended with many vicissitudes. The success or otherwise of the trade depends so much upon fortuitous circumstances, drought, heat, cold and too much moisture, owing to the violent climatic changes which are experienced, and the plagues of locusts and other 'bichos,' which devastate the country not infrequently, that cereal growing is not followed to the extent it otherwise would be. It is estimated that in a period of fifteen years ending with 1901, there were only five successful years in wheat crop.

Notwithstanding the difficulties which have had to be contended against, the exports of wheat, maize, linseed and flour have increased in ten years as follows :—

	Wheat. Qrs. 480 lbs.	Maize. Qrs. 480 lbs.	Linseed. Qrs. 416 lbs.	Flour. Sacks 280 lbs.
1891 - -	1,821,000	303,000	66,000	55,000
1901 - -	4,500,000	5,242,000	1,971,000	579,000

The largest quantities ever exported in a single year were, wheat and flour together, 9,000,000 quarters in 1900, maize 7,200,000 quarters in 1896, and linseed 1,971,000 quarters in 1901.

The area in the chief provinces in which wheat and linseed are sown is as follows :—

WHEAT—Acres sown 1900 :—

B. Aires.	Santa Fé.	Cordoba.	Entre Rios.	Others.	Total.
2,268,000	3,663,000	1,546,000	694,000	177,000	8,348,000

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WHEAT—Acres sown 1901 :—

B. Aires.	Santa Fé.	Cordoba.	Entre Rios.	Others.	Total.
2,403,000	3,417,000	1,440,000	695,000	185,000	8,140,000

LINSEED—Acres sown 1900 :—

269,000	859,000	224,000	145,000	—	1,497,000

Acres sown 1901 :—

475,000	1,078,000	218,000	163,000	—	1,934,000

Maize area statistics are not obtainable. The other cereal crops comprise 30,000 acres under oats and 16,000 acres under barley. Santa Fé wheat is regarded by millers as the best River Plate wheat. The yield per acre rules highest in the province of Buenos Aires, —average about 14 bushels per acre for wheat and linseed. The wheat crop is usually sown in the months of May and June, and the reaping commences in the north of Santa Fé, in November, and finishes at the end of December in the south of Buenos Aires. Maize is planted in October and reaped in February-March.

During the cereal year 1st August, 1900, to 31st July, 1901, the quantities of wheat and maize exported by Argentina to the United Kingdom, Belgium, Germany, and France were as under :—

	U. Kingdom.	Belgium.	Germany.	France.
Wheat (qrs.) -	2,896,400	1,398,000	1,435,000	112,000
Maize ,, -	1,501,900	567,000	347,000	426,000

Brazil also takes a large quantity of Argentine wheat and flour, the figures approximating 300,000 quarters of the former, and 400,000 sacks of the latter annually.

We cannot attempt to go into the world's production of grain, nor yet its consumption, but proof is not wanting that our North American cousins attempt

NOTE.—The total shipments of Wheat and Flour, Maize and Linseed from the Argentine Republic in 1906, were as follows :—

Wheat and Flour	11,304,000 qrs.
Maize	11,550,000 qrs.
Linseed	2,760,000 qrs.

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at times to 'corner' the market, and control this, as other trades, though sometimes with disastrous results to themselves.

The only other grain-producing Republics in South America which can export at times are Uruguay and Chile.

The following quantities were exported from Uruguay in 1900, viz. :—

Wheat - - - -	184,000	quarters.
Maize - - - -	2,000	„
Flour - - - -	140,000	sacks.

These figures shew considerable diminution as compared with those for 1894, viz. :—

Wheat - - - -	506,000	quarters.
Maize - - - -	225,000	„
Flour - - - -	261,000	sacks.

Uruguay ships also small quantities of barley and linseed. The flour is chiefly sold to Brazil and Chile.

The official agricultural census of 1894 gave the following particulars :—

	Wheat.	Maize.	Barley.	Beans.	Linseed.
Acres - -	503,000	310,000	6,872	27,000	2,191
Product (bush)	8,640,000	5,091,000	112,000	154,000	22,170

Shipments of these cereals are made from the port of Monte Video, chiefly to Brazil, England and Belgium.

Chile used to produce some 2,000,000 quarters of wheat, of which about 500,000 quarters were available for exportation to Peru and Europe. The largest quantity of wheat ever exported from Chile in a single year to all places was 856,000 quarters in the year

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1893, in which season, in addition, there were exported 15,000 sacks of flour and 135,000 quarters of barley, but of this last-named cereal there were far greater exports in the year 1896, when 310,000 quarters were exported. Chile, however, has now to import as she does not grow enough wheat for her own needs. This, it is thought, is due to the fact that the ground has been worked out, *i.e.*, it has not been sufficiently manured, and the system of agriculture followed has been one which has tended to impoverish the land generally. This seems strange in a district within easy reach of the great nitrate and guano deposits. The farmer, however, will spend little, possibly from the uncertainty of his tenure and the process of putting up the farms every ten years, whether tenanted or not, to the highest bidder. There is, however, another factor contributing to the reduction in the wheat crop, viz.: the cultivation of the vine in what was formerly the wheat district, and the forcing of the wheat-growing into the rainy region further south.

We cannot close this chapter, which possibly for some may be too full of dry facts and statistics, without alluding a little more in detail to our visit to Campana, the small town on the River Paraná, where, as already stated, the premises of the River Plate Fresh Meat Company are situated. The journey thither afforded us a view of the 'camp' or country, and which we found for the most part to be flat and uninteresting in itself. It, however, grows upon one, and there is undoubtedly a feeling of freedom created by the immense vistas which are opened out, and which look like seas of

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grass, rising and falling with a wave-like motion at the will of every breeze that blows. Here and there 'estancias' (large farmsteads) may be seen, the buildings in many cases being of a substantial kind, and here and there are 'ranchos' belonging to the labouring classes, which are simply mud huts. There is much to interest a stranger in a journey over the

CAMP SCENE—ARGENTINA.

camp. First and foremost are the large herds of cattle and 'tropillas' of horses and sheep innumerable. Then there are the birds, of which there is an infinite variety—martinellas (a kind of partridge), wild duck, water hens, cranes and large birds of prey, being amongst those chiefly seen. There are certainly plenty of dead horses and cattle for the birds of prey to feed upon.

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Vast quantities of water lay on the country; in fact it appeared from the train in some places, as if we were crossing over lakes, there being water on either side of the track, in some parts extending for a quarter of a mile. Thousands of sheep, and we might possibly with more accuracy say millions, had been drowned by the recent inundations, and communication between the estancias was being carried on by boat.

Another thing of interest is the cart usually employed for conveying loads over the camp and across the seas of mud which are known as roads. The cart runs on two very high wheels, the body being almost the size of an English wagon. There are usually three horses abreast at the shafts and nine horses abreast leading. Twelve horses seem a large number for a man sitting on a cart to drive, but nothing appears to be thought of the feat in Argentina. On arriving at Campana we were driven to the Saladero, and were soon over our axles in mud and water. However, we got to our journey's end without accident, and were soon investigating the mysteries of the slaughter-house. We have already given a general description of the thoroughness in which the work is done, the only waste being the blood. Even that when freights were lower was made into manure and sent home for agricultural purposes. It is astonishing what a small place the world is! This is not an original remark, as all my readers will know, but we kept on meeting people here and there, in all sorts of out of the way places, who knew us or our friends, that we had the fact brought

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particularly home to us and a pleasant fact it always proved. There was, of course, a Liverpool man at Campana trying his luck in the camp.

Thousands of cattle and sheep are passed through the Fresh Meat Company's premises each day, and are then shipped frozen to Europe to feed the masses. Some of the cattle we noticed were hornless, having had their horns taken out when young so that they will, when being sent by train to the Saladeros, not damage one another. There are two kinds that naturally have no horns, *viz.*: the Polled Angus and the Galloway, both importations from Scotland, and these have a high reputation, the meat being deemed the best in the world. At the slaughter yard a 'decoy sheep' is used to bring in the sheep from the fields, and it is a somewhat painful sight to witness this scene. The 'decoy' is well trained, and of course is never touched.

After the inspection we were kindly entertained on board one of the 'Z' line steamers which was lying alongside the wharf, and an instructive visit was thus brought to a close.

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CHAPTER XII.

BUENOS AIRES. ARGENTINE ARMY. JOCKEY CLUB BALL. ARGENTINES. RESERVOIR. JOCKEY CLUB. JOURNEY TO LA PLATA. LA PLATA PORT—PILOTAGE—PORT APPLIANCES—DUES. CITY OF LA PLATA. SCORPION STORY. WEATHER. RETURN TO BUENOS AIRES. MORE STORIES ROSARIO DE SANTA FE—MEANS OF COMMUNICATION WITH BUENOS AIRES. ROSARIO EXPORTS. RIVER PARANA. GAUCHOS. AMUSEMENTS. BUENOS AIRES. RACES. FALSIFICATIONS. CURRENCY. PROVINCE OF BUENOS AIRES. CREDIT SYSTEM. ARGENTINE NAVY.

WE were fortunate in seeing Buenos Aires at its best the plazas, streets and public buildings being beautifully decorated with flags and floral wreaths, and in the evening with innumerable electric and coloured lights arranged in fantastic and ornamental designs, and in many cases outlining the buildings on which they were fixed. The sight at night time was the nearest approach I have seen to the Street of Nations in the recent Paris Exhibition, a veritable fairyland when viewed from the river. The occasion of all this display was the visit of His Excellency Señor Don Campos Salles, the popular President of the Brazilian Republic, in return for that paid him by the President of Argentina. Calle Florida and the Plaza de Mayo, in front of the State Buildings, were particularly splendid, and the Brazilian President must have felt flattered at the royal reception he received.

S. E. GENERAL JULIO ROCA,
President of Argentine Republic, 1904.

There was a grand military display, and it seemed to us that the whole army had been re-clad

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for the occasion. They certainly made a handsome display, and the march past was quite equal to any we had previously witnessed in our own country, though limited somewhat numerically. The regular army consists of about 12,000 officers and men, and there is a national guard of about half a million men.

A compulsory military system prevails in the Argentine Republic. Men between the ages of 17 and 45 are liable to be called out for two or three months in the year, but I am told that, as a rule, they do not make good soldiers, being too lazy to learn.

Foreigners resident in Argentina endeavour to arrange that their children shall be born out of the country, to evade the law.

The ball which followed at the Jockey Club was quite worthy of the great occasion. It was a brilliant scene. The ladies of Buenos Aires certainly know how to dress, and the display of gems was magnificent. The ladies for the most part are extremely stout, as they take little or no exercise, and are very partial to sweetmeats. A drive in the Calle Florida at four o'clock in the afternoon on certain days, or to the suburbs of Belgrano and Palermo (Belgrano is certainly the fashionable quarter, and the park at Palermo is well worth visiting) represents about all the exercise usually taken by the fair sex, though possibly some of the younger ones may indulge in a little boating at Tigre, a charming place for the purpose and an ideal spot for a picnic.

One building in Buenos Aires which particularly took our fancy, is used as a reservoir, and was full of

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tanks and pipes instead of art of every description. Externally it is a temple of art, and must have cost an enormous sum to erect. Its outer walls are constructed of Doulton ware, principally terra cotta and marble,

STREET SCENE IN BUENOS AIRES.

and the most beautiful designs are seen at intervals all round the building. Its use as a reservoir seemed to us a desecration. When we contrasted the amount of money which must have been expended in this fashion with the little spent on the roadways in the outskirts of

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the city, we could not resist the conclusion that the money might have been laid out to better purpose. In the outskirts, the streets and roads are for the most part unmade, and in wet weather almost impassable.

Another building which we much admired was that in which the Jockey Club is quartered. This is the principal club in the Argentine Republic, and it is fitted with every imaginable convenience. The club is a very exclusive one.

As we had determined on a visit to La Plata, a journey occupying about two and a half hours, the distance from Buenos Aires by rail being 63 kilometres, say 40 English miles (by water the distance is 30 miles), we started early in the morning in order to pass a long day there. The country between the two ports is quite flat and uninteresting, excepting for the large troops of horses and herds of cattle. In one field we saw quite a number of ostriches, but they were not native to this part of the country, having been imported from Patagonia. All along the railway route could be seen skeletons of horses and cattle which, dying in the fields, had been left there to rot and taint the atmosphere. These are gruesome things to see, but the natives do not consider it worth the trouble to remove the carcases. The horses in the country were excellent animals, and a first-rate saddle horse could be bought for about £10. Of course everyone rides, and were it not for the occasional restrictions against the importation of live animals into Great Britain, a cheap supply of good horses would

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always be forthcoming from the River Plate. The horse, however, in Buenos Aires city, as in our own country, is rapidly being superseded by electricity and other motive powers. Our visit to the town or city of La Plata we left until after we had inspected the docks and depôts and some of the steamers then frequenting its port, the principal of which belong to the Royal Mail Steam Packet Company and the Cie des Messageries Maritimes, and which were really the only two mail lines terminating there. These, we understand, have now removed to Buenos Aires, owing to increased depth of water in the channel leading to the Madero Dock.

Passengers to and from Buenos Aires are conveyed to La Plata by special trains, which are run alongside the steamers. There were at the time of our visit only three steamers in the dock, in addition to several Argentine men-of-war. The depth of water in the channel leading into the dock, and in the dock, was 27 feet, but the published descriptions of the port state the depth of water at the entrance of the Moles as 23 feet, and in the Grand Dock 22 feet at ordinary low river. The distance from the molehead to the entrance of the dock is 3½ miles, south by west, in a direct line. The dock is without gates, and a steamer can proceed direct to her berth, or steam to the head of the dock, where it is much wider, for the purpose of turning round. There is some warehouse accommodation at the dock, but almost all cargo is taken on board direct from railway trucks, and from lighters alongside.

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The entrance to the channel is badly lighted, and should only be made in daylight. Tugs, fore and aft, are necessary to keep steamers in the centre of the channel. There are three tugs in the dock available for the service, two owned by Mr. Mihanovich and one by Messrs. Wilson, Sons & Co., Limited.

Pilotage is compulsory, the pilots being taken just off the entrance; and the channel, which is about 150 yards wide, is buoyed.

Just at the entrance to the dock the channel is intersected by the Rio (River) Santiago, and at the north-west corner Messrs. Wilson's coal wharf is situated. They have ample appliances, and seven barges of 1,400 tons total capacity.

According to the Consular Report, for 1891, the La Plata dock dues are in future to be as follows :—

'10 cents paper (2d.) per registered ton for ocean steamers, or sailing ships, which may enter to take a cargo of live stock, to complete with grain, or in ballast to take a cargo of products of the country for export.

'20 cents paper (4d.) per registered ton for sailing vessels coming in loaded and loading produce of the country. Steamers coming in for coal only will pay entrance and dock dues according to the quantity of coal taken, not according to tonnage,—100 tons to be the minimum.'

We were certainly disappointed with La Plata port,—it seemed so desolate, so very little business being done, but since our visit the cattle business has had a 'fillip,' and the facilities of the port for that trade are very good. The grain shipping appliances are also

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good, and there are now large deposits for export produce. Several millions of bags can, we understand, be stored alongside the quay wall, all under shelter, and the loading of the grain has improved so much that as many as 34,000 bags have been loaded in one steamer in an ordinary day's work. Large developments in the grain trade of the port are anticipated.

The British Consul, in writing respecting the port, states: 'The new capital of the province of Buenos Aires, the city of La Plata and its port, has been built too near its ancient capital, the City of Buenos Aires, which in its new phase as capital of the Argentine Confederation, continues to absorb the greater part of the commercial and social movement of the Republic, including of course, that of the Province of Buenos Aires. La Plata port, from a commercial point of view, therefore, serves chiefly as a port of transhipment to and from the City of Buenos Aires. The population of La Plata and its port is about 80,000, and the establishment of industries has been projected since the creation of this City in 1882, but so far, with the exception of a few factories of small importance, none have been realised, although reports, which appear to be reliable, now freely circulate that a British Refrigerating Company has been definitely formed in London to buy up the concession of a cattle wharf in the La Plata docks. The realisation of this scheme would constitute another agreeable prospect for the future development of commercial movement at La Plata port.'

If we experienced a feeling of loneliness at La Plata port, we certainly became quite melancholy

NOTE.—The National Government has now acquired the port of La Plata from the province of Buenos Aires. Vessels which have paid Dues at Buenos Aires can now proceed to La Plata and fill up without further charges. The Dues at La Plata are now the same as at Buenos Aires.

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insufficient means. If the boom in trade had gone on year after year, all would, no doubt, have been well, but whoever knew booms to follow such a regular course! As a rule there are more 'slumps' than booms, and if we were to regulate our expenditure by the full years, we should be in queer street in the lean ones. This is partly what has happened in La Plata. There is another reason, which may be found in the reflection that it was probably the intention to out-do the city of Buenos Aires, and transfer the trade thence, thus creating at La Plata one of the finest cities in the world, but the government evidently did not wish this. So far as the planning out of the city is concerned, with its beautiful wide 'calles' and 'avenidas,' given ample means to keep it up, it is, to say the least, pretentious, and, at the most, a grand conception. Should you visit there, pray sit down on a seat in one of its wide, grass-grown streets, with some of the untenanted and half-finished palaces in view, and reflect what must have been the dreams of splendour which caused this city to rise up as it were in a night, and the havoc done when the sickly conclusion was borne in upon the dreamers that their aspirations could never be realised. One might readily weave a sad

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romance about this city, populating it with the ghosts of wealth, opulence and ambition, and concluding the work with the speech attributed by Shakespeare to Cardinal Wolsey.

On the outskirts of the city, there is a splendid avenue of eucalyptus trees of great height. This forms the favourite drive. We had come across a scorpion in one part of the deserted city, which gave rise to a story we can scarcely omit from our records. Some friends of one of our party were dining, after a gallop in the country, at a wayside 'posada,' when the waiter brought in a scorpion in a serviette, saying that he would give the guests a little amusement. He then made a ring with some 'aguardiente' on one of the marble tables, set it on fire and placed the scorpion in the centre. The reptile at once began to rush round the circle, seeking for some means of escape; but finding none, punctured itself in the back of the neck with its tail (where it carries its poison), and died immediately. It really committed suicide, giving clear evidence that these reptiles can think, and do not act merely according to instinct or fixed laws.

We were glad to get into the train for the return journey to Buenos Aires, as the weather, which had been cold and pleasant in the morning, 65° Fahr., became suddenly hot, the thermometer running up to 86°, added to which there was a dampness in the atmosphere which made the heat all the more difficult to bear. We had had the south wind, which is the cold wind there, in the morning, and this veered round to the north, or hot wind,—quite the opposite to our

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own country. Of course, after this sudden change we had a violent thunderstorm, which continued until the following day. It seemed as if the city would be washed away, and the noise of the thunder and the flashing of the lightning were simply terrifying. But we had work to do, and as we were soon 'up to our watch chains in it,'—according to the expression there,—we had no time to contemplate the storm. Lunch or dinner usually comes along to relieve the monotony of work, and each offers an opportunity for more yarns. It seems that at the particular restaurant we patronised that day in the Calle Florida, there were three men who were accustomed to dine together regularly. One of them, who presided, had the ugly trick of always helping himself to the best cut, etc. The other two resolved to pay him out, and they ordered the waiter, when the omelette was served, to place it in front of one of them. This being done, the greedy man was asked what portion he liked best, and, being true to his natural instincts, replied 'the middle.' The omelette was then cut in two, each of the confederates retaining a half, the 'middle cut' (the plate) being left for the man who wanted it. He had to order an omelette for himself that day, and it is hoped that the lesson was not lost upon him. Truly there is a great art in knowing how to avoid, or suppress, in oneself, everything likely to offend the susceptibilities of others.

Our next excursion was to Rosario de Santa Fé, the second city in point of importance in the Republic, and the great grain shipping port. Its sugar industry we have alluded to in Chapter VI.

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There are a number of small steamers employed trading between Buenos Aires and Rosario, and the cargo so carried amounts to about 50,000 tons per annum. There is no regular trade between Rosario and southern ports, and whilst ocean-going passenger boats sometimes load at Rosario, passengers, as a rule, join at Buenos Aires.

Mihanovich's steamers monopolise the traffic between Monte Video and Rosario, there being a weekly sailing. Very few passengers, however, are carried, as the public usually prefer to travel by rail, making the journey, as we did, in the night, leaving Buenos Aires at 9 p.m., and arriving at Rosario at 8 o'clock next morning.

The following were the principal exports of Rosario during 1899 :—

Minerals	713	tons.
Wheat	851,184	,,
Linseed	93,530	,,
Maize	226,820	,,
Hay	32,280	,,
Flour	8,320	,,
Potatoes	1,173	,,
Sugar	24,500	,,
Bran	26,106	,,
Wool	4,273	,,
Hides	8,852	,,
Hair	396	,,
Quebracho	5,660	,,
Cedar	620	,,
Bones	373	,,
Sundries	1,071	,,

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The River Parana forms the port, and the best way of inspecting it is by tug. The left bank being high, vessels can, in most parts, get near to it and load full cargoes of cereals from flying shoots stretched from the bank to the vessel. There are several wharves, at most of which vessels with a draft of 20 feet can usually discharge and load. A German steamer was alongside loading grain at the time of our visit, and was drawing 19 feet aft. During the winter the river is, however, not safe to navigate with a draft of more than 17 feet. The port has been much neglected, as it was feared it might damage Buenos Aires; but an agitation was got up in 1900, and the government, in consequence, passed a bill for port improvements, and these will shortly, it is hoped, be proceeded with.

Rosario is an interesting and busy town, built in squares like Buenos Aires, but the streets are not well paved. There are one or two good clubs, and, as the country is more interesting than that immediately surrounding Buenos Aires, it is not at all a bad place to live in. We were sorry time did not admit of our staying longer than a day, and also that, for the same reason, we could not make the return journey to Buenos Aires by water. On our way back we saw some good specimens of the 'Gaucho' class, and later, an exhibition of their skill at the Palermo Cattle Show, one of the finest shows of the kind in the world. A bull, irritated by one of its horns, the point of which was growing into the skull, broke loose from its fastenings, and rushing into the open, caused great

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consternation among the visitors, but, fortunately, nothing of more serious consequence. The Gauchos on horseback soon lassoed it by the feet and head, threw it on its back and cut off the offending horn. It

A GAUCHO.

was the work of a few moments, and the bull, thoroughly cowed, tamely trotted off to its quarters after the operation.

There are, naturally, in a large city like Buenos Aires, plenty of places of amusement both in the city proper and in the outskirts. The river is always there if everything else fails, and there are frequent races and other sports, one of the principal amusements being the game 'Pelota,' described in Chapter VIII. The racecourse is a sight to see when some special event is on. The Jockey Club stand and enclosure, crowded with elegantly-dressed ladies, ever a blaze of rich colour, the magnificent horses, and the excitement of the keenly contested races, coupled with the speculation—for everyone bets, either privately or through the

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organised system—make up a scene of life, coloured by the love of all that is beautiful, and intensified by the love of sport. The roadway outside the racecourse, for half-a-mile on either side of the entrance, was lined

RACECOURSE—BUENOS AIRES.

with splendid equipages of all descriptions, and the show of horseflesh could not possibly be surpassed. Dress, horses and jewellery seem indeed to embody the ambition of the true Argentine, and the money spent to satisfy this craving must be enormous.

Money is made in many ways in Buenos Aires, and a great deal of foreign—principally British—capital finds its way into that city for the extension of its many schemes, some, as in other places, commercially sound, and others the reverse.

Wines and spirits are more or less falsified, for there are dishonest people everywhere, and it is an open secret that labels of all well known brands are shipped to this as to some other South American ports.

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The man who can 'sneak' a thing, to use the current expression in the Plate, and the man who can defraud the Revenue, are by many secretly admired and considered smart men of business, so that it is quite necessary to be thoroughly awake and alert here as elsewhere, to do profitable trade.

We heard a well-dressed man on one of the river boats bragging that he had 'sneaked' the silver pepper box from the hotel he had stayed at in the city, and his companions enjoyed the 'joke' immensely, instead of cutting his acquaintanceship, or doing what he richly deserved, reporting him to the police.

An instance of the way in which the Customs are cheated was also brought to our notice, and is certainly instructive. It seems that the owner of one of the numerous stores ordered from Paris six cases of gloves. When they arrived he went down to the Customs in the regular course to 'clear' them, and he then pointed out—what he knew all the time—that the gloves were all right-handed. It appeared quite natural that he should decline to pay the duty, which is heavy on gloves, and the cases were therefore sent into the Customs depôt to be sold at the next rummage sale, according to prevailing usage. When the sale came on, the consignee of the goods bought them for a mere bagatelle, as compared with the total amount of the duty. A few months later he got out the left-handed fellows to the gloves, repeated successfully the like manoeuvres, and so escaped the duty. A third attempt, however, was frustrated by the destruction of the gloves.

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There are so many nationalities in the River Plate, each contending with the other in the race for opulence, coupled with a love of finery, that it is scarcely to be wondered at if many are addicted to sharp practices, and the fault referred to is not confined to the Argentines. There are plenty of first-rate, right-thinking and honest men amongst them no doubt, but here, as in other quarters of the globe, the shadow is more noticeable than the light.

We did not see any gold in the Argentine Republic, excepting the English sovereigns we had in our possession, the currency being almost entirely paper, which varies in value from day to day, according to the premium on gold. The value of the nominal gold dollar also fluctuates from day to day, according to the rate of exchange, but it is, roughly speaking, always worth four shillings (English). The paper dollar at the time of our visit was worth about 1s. 10d. There are silver 'pesos' worth say 1s. 5d. each, and 50, 20, 10 and 5 cent pieces.

In 1899, Congress passed a decree to the effect that the nation would convert its paper money into gold at the rate of 44 cents gold for one dollar (paper). This gives a premium on gold of 127·27 per cent., or say $100 gold are equal to $227·27 paper. Certain receipts are set aside by the Government for the purpose, and a conversional office has been opened, but beyond the steadying of the premium, no change in the currency has thus far resulted.

The Province of Buenos Aires contains about 130,000 square miles, and is undoubtedly the most

NOTE.—A Bill is shortly to be presented to Congress which will do away with the present double currency

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fertile of all the provinces. The Argentine Republic contains a total area of about 1,200,000 square miles, three fourths of which is almost level plain.

In the Argentine camp, the farmers as a rule have little or no money, but live in expectation of the results of their work, and borrow accordingly at high rates of interest. If there is a failure in the crop, or drought or floods destroy the flocks and herds, the money question becomes a difficult one, and it is not an exceptional thing for debts of this character to go on for six or seven years, and in some—if not many—cases the farmer is ruined. A man borrows to buy his farm and its equipment, and pays in 'kind' when nature enables him to do so.

We saw some of the Argentine men-of-war, both at Buenos Aires, La Plata, and at Bahia Blanca, and considerable interest was taken in one of the cruisers, the 'President Sarmiento,' which had been for a voyage round the world with a number of cadets, on what might be termed an educational expedition.

There are 52 vessels in the Navy, of which nine are armoured, and fourteen cruisers. The rest are torpedo boats and auxiliary vessels.

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CHAPTER XIII.

JOURNEY TO BAHIA BLANCA. PONCHO. CORBINA. PEJEREY. TRADE OF BAHIA BLANCA. COASTING TRADE IN THE HANDS OF THE GERMANS. EXPORTS. RAILWAY MOLE. PORT FACILITIES. FROZEN MEAT WORKS. PORT EXTENSIONS. IMPORTS. MILITARY PORT AT PUNTA BELGRANO. BARRACAS DE FRUITOS. RETURN TO BUENOS AIRES. MORE STORIES. TIGRE. MONTE VIDEO. RIVER PLATE. URUGUAYAN RAILWAYS. EXPORTS. IMPORTS. SALADEROS. POCITAS. YERBA MATTE. CAACUPÉ, PARAGUAY.

THE only other town of importance visited by us in the Argentine Republic was Bahia Blanca, a rising port on meridian 40. The journey thither, excepting the last twenty to thirty miles, exhibited a flat expanse of camp as far as the eye could reach, with but very few trees, and without any hedgerows to relieve the monotony. Where the plain was broken, a low range of mountains, beautifully green right to the top, showed up to great advantage, and afforded some relief to our wearied vision. The mountains were passed all too soon, and we went speeding on again over the 'pampa' till we reached our goal. There were again plenty of birds to be seen on the pampa, as also 'gauchos' driving cattle into the 'corrales,' or exhibiting themselves, as they appear to be fond of doing, in the railway stations, wearing their 'ponchos.'

A 'poncho' is a kind of rug with a hole in the centre, through which the head is thrust. There are a great variety of these, for the most part coarse in texture and gaudy in colour, but some are hand-woven from vicuña wool, and are expensive. A good many

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of the natives wear two ponchos, making a sort of loose pair of trousers out of the second, which they tuck into the waistband of their 'calzoncillos' (linen drawers).

The country seemed to be teeming with cattle and sheep, and it looked fit for any kind of cultivation, apparently all that is wanted being labour—in fact it is said the soil is so good that if one plants a walking stick it will grow into an umbrella. The climate, however, is very variable, and a year of plenty might be followed by a good many meagre ones. The facilities for transport are rapidly increasing, the country is being opened up in all directions, and if the government do not hamper the agricultural industry with too many taxes and restrictions, and the railways keep their rates within reasonable bounds, the near future should witness considerable progress in this Republic.

The journey across the pampa is usually a very dusty and dirty one, and travellers get themselves up in long linen overalls as a protection. Fortunately we travelled after the wet pampero, and were not troubled much with dust until we arrived at Bahia Blanca, where we got quite as much as any lover of this sort of thing could wish. We went straight down to the port, which is some two to three miles distant from the town, and inspected the system of working on the Mole. We also saw the fishermen coming in with boatloads of corbina, the favourite salt water fish of Argentina. It is a coarse and oily fish, but of good flavour. At Buenos Aires the only native fish in demand is 'pejerey' (king of fish), which is something

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like whiting, and, when well cooked, is very good eating.

There is a coasting traffic between Bahia Blanca and Buenos Aires, which was, up to recently, when a

BAHIA BLANCA—PORT.

line of German steamers was established, entirely in the hands of Miguel Mihanovich, of Buenos Aires, whose steamers carry to Bahia Blanca rough goods, such as lumber, fencing wire, galvanised iron, machinery, &c., and return to Buenos Aires with produce for transhipment. The greater part of the imports and fine goods go from Buenos Aires to Bahia Blanca by the Buenos Aires Great Southern Railway, the distance by rail being 350 miles. The Germans obtained possession of the coasting trade through their being able to meet the Argentine demand for vessels flying the national flag, and they have now practically a monopoly of the trade right down the coast of Patagonia to Punta Arenas, in the Straits of Magellan, though

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whilst this is passing through the press we notice that the Pacific Steam Navigation Co. are inaugurating a regular service to Argentine ports. This coasting business could readily have been secured to a British line, with excellent concessions and a possible subsidy, but for the flag difficulty; and really our Government should wake up to the fact that if its foreign trade and coasting lines abroad are to be protected and enlarged, it must meet the requirements of shipowners in a broad and liberal spirit. Quite recently it was reported that the whole of the Brazilian coasting service had been secured by the Germans purchasing the national line. Having done this, they will fly the national flag, thus securing the monopoly of the coast and the coasting trade, with all its future possibilities of development, from the Amazon to the Straits of Magellan. Let us, however, return to Bahia Blanca, for the more we write on the last subject the more we become irritated, and the John Bull spirit of holding to our trade and advancing it is crushed within us by the weight of our own restrictions and the sense of the liberties accorded by other, dare we say, more trade-enlightened nations.

Wool, wheat, and sheepskins are the principal exports at Bahia Blanca. The wool is shipped to Antwerp, Dunkirk and Hamburg. The wheat goes to Antwerp, Rotterdam and the Channel for orders. Little produce of any kind is shipped direct for British ports.

The mole, which belongs to the Buenos Aires Great Southern Railway Company, is about 325 feet in length, and 70 feet wide. It is too small to admit of

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the rapid discharge and loading of steamers; and although a vessel carrying 6,000 tons has been dealt with at the mole, vessels have to wait their turn to get a berth, and frequent serious delays have occurred—one vessel, to our knowledge, being detained for forty days.

Vessels can be berthed on either side of the mole, there being 23 feet at low water, with a rise of about 10 feet. The bottom is soft mud, and the port does not present any serious difficulty. The Great Southern Railway Company were engaged in extending their mole into the form of a long 'T' east and west, with approach embankments, having four lines of access as against one at present. The new mole, which, we understand, is now completed, has a width of 103 feet, and the total length is about 1,960 feet. The Great Southern Company can load several thousand tons a day, and they have a powerful tug.

There are plenty of cattle and sheep in the neighbourhood of Bahia Blanca, but no shipments have been made owing to the want of the necessary wharfage accommodation and facilities.

The Sansinena Company are establishing frozen meat works a little higher up the river than the railway mole, and there will be a development of this business in the near future. The difficulty in the way of this, hitherto, has been the dust, which is so prevalent that it finds its way into every nook and corner, and turns the meat black. A means of overcoming this has, we understand, been found; and the works are now rapidly approaching completion.

The number of steamers leaving Bahia Blanca in

NOTE.—The Great Southern Railway Company's Mole Extension is now completed.

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BAHIA BLANCA PORT

ADDITIONAL ACCOMMODATION FOR SHIPPING

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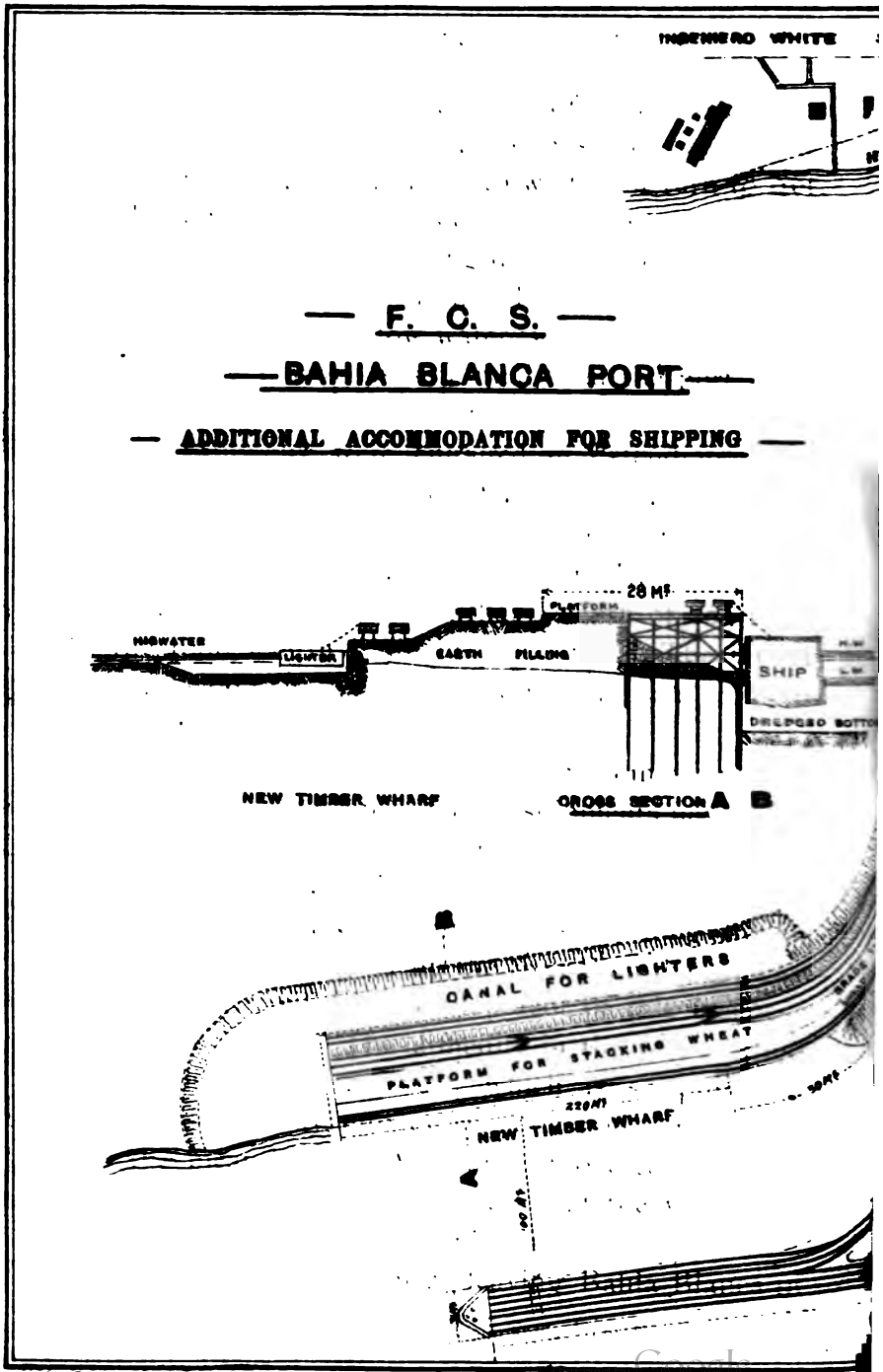

Philip Son & Nephew, Ltd, Liverpool.

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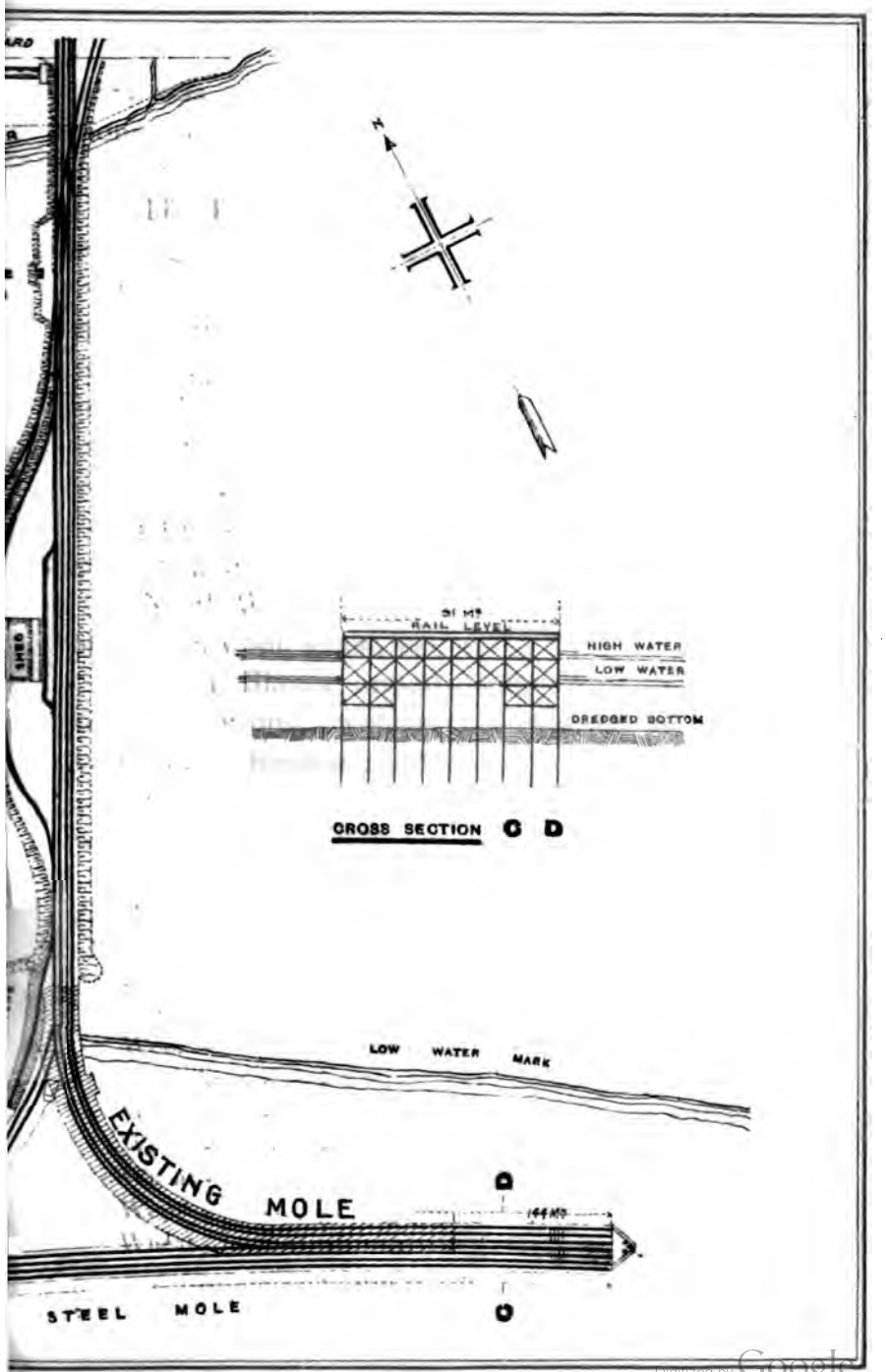

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1881 was 4, as against 63 in 1900. Building operations are brisk, and the town has now about 10,000 inhabitants.

The Bahia Blanca North Western Railway, also running into the town, has hitherto been at the mercy of the Great Southern for shipping facilities, but they have in project the erection of a wooden mole two miles further up the inlet than the existing one. As the material for this was all on the ground at the time of our visit, the mole should now be approaching completion. The new mole will be 300 feet in length, with room to work on either side. There will be a raised platform, so that cargo can be loaded by gravitation. The North Western have two large warehouses for the storage of wool, grain, etc.

Bahia Blanca imports iron, in various forms, timber, cottons, worsteds, combustibles, eatables, various merchandise and liquors.

The exports from Bahia Blanca during 1899 were :—

Merchandise.	Destination.	Quantity.
Wool	Antwerp	4,548,812 kilos.
Sheepskins	,,	174,728 ,,
Horsehair	,,	21,458 ,,
Wheat	,,	125,311,005 ,,
Wool	Hamburg	16,906,846 ,,
Sheepskins	,,	83,895 ,,
Wheat	,,	12,916,365 ,,
Wool	Dunkirk	5,218,225 ,,
Wheat	,,	2,000,000 ,,
Wool	England	6,633 ,,
Wheat	,,	33,545,347 ,,
,,	Rotterdam	5,815,440 ,,

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Merchandise.	Destination.	Quantity.
Wheat - - -	Brazil - -	2,800,000 kilos
,, - - -	Liverpool - -	519,280 ,,
Wool - - -	Buenos Aires -	1,498,121 ,,
Sheepskins - -	,, -	1,366,251 ,,
Cowhides (dry) -	,, -	229,169 ,,
,, (salted)	,, -	74,057 ,,
Horsehides (dry) -	,, -	12,718 ,,
Horsehair - -	,, -	58,002 ,,
Tallow - -	,, -	76,737 ,,
Grease - -	,, -	10,497 ,,
Ostrich feathers -	,, -	6,141 ,,
Goatskins - -	,, -	535 ,,

The roads leading to and all around the town or city of Bahia Blanca are terrible after rain, and difficult to use excepting on horseback or by coach. There is nothing attractive about the city, save its primitive character, though there are one or two good hotels—good in everything save their sanitary arrangements, which are simply horrible and disgusting.

Bahia Blanca is divided into two parts, Punta Congreso, where the town and ports are situated, and Punta Belgrano, the site of the military port. No one visiting Bahia Blanca should fail to inspect Belgrano. The engineer of the port has been lent by the Italian Government to the Argentine Government, he being a specialist in the construction of military ports, and the work he has done at Bahia Blanca, not only in the port but all round it, will remain as a permanent testimonial to his skill, his indomitable energy, and his love of the useful and beautiful. He has transformed what was a desert into a garden, with chalêts, well-sewered roads,

NOTE.—In 1905, 1,000,000 tons of wheat were shipped from Bahia Blanca, and the population had then increased to 30,000

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splendid docks, and what will be—as they were then unfinished—large water works, hospital and batteries.

There is an excellent graving dock, capable of taking in the largest ship in the world, and as the dock accommodation as a whole must be much in excess of anything the government authorities will ever require, it is to be hoped that the day is not far distant when this system will be thrown open to commerce. These docks are connected with Bahia Blanca by a short railway, and there is no reason why the city should not extend in the direction of the docks.

We shall ever entertain the most pleasant recollections of our visit to this port, made doubly agreeable by the kindly hospitality we received. We were privileged to pay a visit to the outlying batteries, travelling over some thirty miles on a locomotive, which was, to say the least, exhilarating, though we finished up in a heavy thunderstorm.

The forts are masked, and extremely well made, though the guns are somewhat old. The soldiers were principally Indians, and it was remarkable how well trained they were, and with what order and precision everything connected with the forts was attended to.

After an inspection of the extensive Barracas de Fruitos—warehouses for wool, wheat, &c.—of the North-Western Railway, we concluded our visit to Bahia Blanca, and returned to Buenos Aires by the way we had come. We were much troubled, both at Bahia Blanca and on the journey thence, by

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mosquitoes, which were nearly as large and voracious as those met with up the Uruguay River. Respecting these, we may say that the story is that a certain captain, meeting another coming up river, was asked about the mosquitoes, and his answer was that they were so terrible that they had eaten all his canvas. 'Oh!' replied the other, 'then that must have been the swarm we met, as they all wore canvas breeches.' But this is not quite so bad as the Irishman, who was sleeping with a comrade in one of the country hotels, and persisted in continually keeping the blanket over his head. He was awakened shortly by his companion calling out: 'Be jabers, Pat, it's no use at all, at all; sure they're coming to look for yez wid a lanthorn.' Needless to remark, a firefly had got into the room.

That night we had a 'she' moon, and as this is a sign of bad weather, we were not taken unawares next day, when a sudden rise in the temperature was followed by a violent storm. In case the reader may not know the difference between a 'he' and a 'she' moon, we give the following explanation:

'He' moon 'stands up,' and is a sign of fine weather.

'She' moon 'lies down,' and indicates storms, etc.

The bad weather usually, under these circumstances, comes on in the evening, and clears towards midnight.

After a pleasant little excursion to the Tigre, about twenty miles from Buenos Aires—a small river

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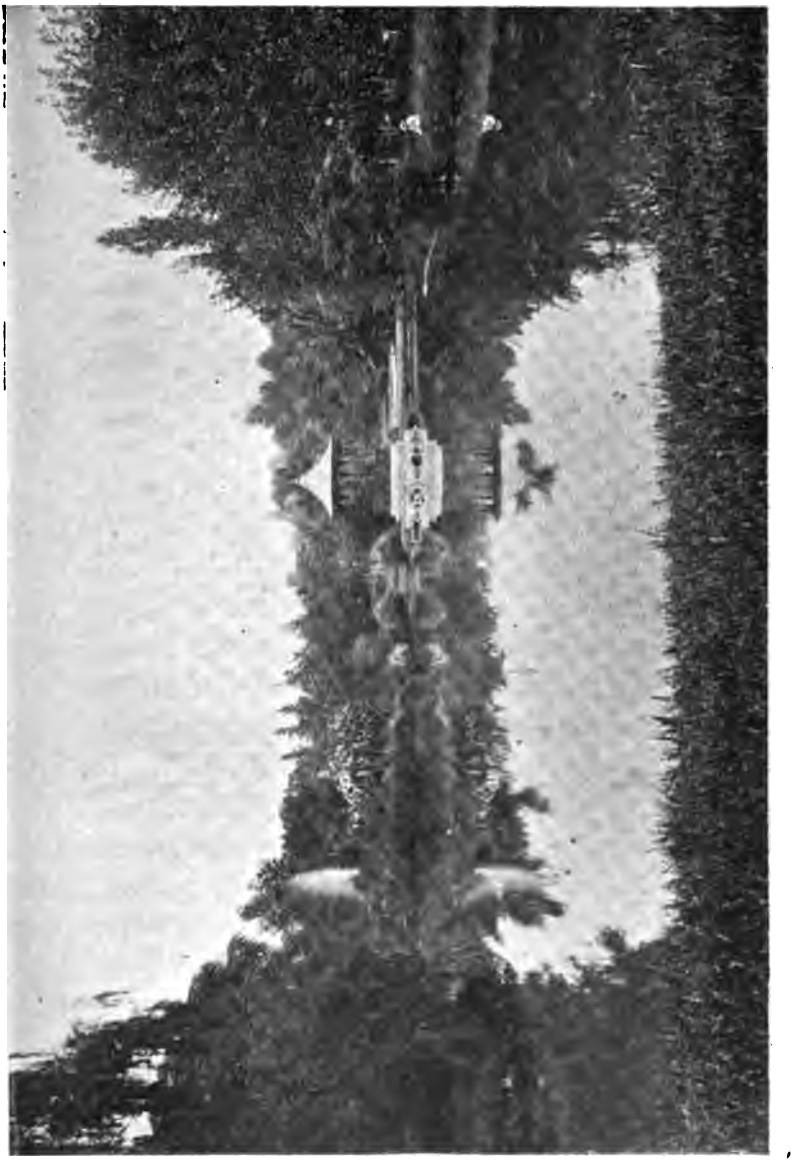

VIEW NEAR BUENOS AIRES.

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running into the Paraná, and to which we have previously alluded—we concluded our visit to the Argentine Republic. The Tigre is something like our own river Dee in Cheshire, only prettier. The banks are clothed with willows, looking very beautiful, and there are splendid villas, surrounded with handsome gardens, abutting on the stream. It is by far the most beautiful suburb of Buenos Aires.

The passage down the river to Monte Video was excellent, and we were much impressed by the vastness of the River Plate, or more properly speaking, the broad estuary formed by the waters of the Rivers Paraná and Uruguay.

The Rio de la Plata, or River Plate, was discovered in the year 1515 by a Spanish navigator named Juan Diaz, but to a native of Bristol, Sebastian Cabot by name, is accorded the honour of having first explored the river, and of having named it the 'river of silver.' It seems the Indian inhabitants, along the banks, wore massive silver ornaments; and Cabot, concluding there must be an abundance of this metal in the vicinity, gave the river its appropriate name.

The bay of Monte Video is, as indicated in Chapter X, very much exposed, and, owing to the shallow water, steamers are loaded and discharged into lighters two or three miles distant from the city. The projected dock system will include an exterior port, having deep approaches (26¼ feet), so that before long steamers will be able to do their work in smooth water.

The most prominent object on entering the bay is

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the 'Cerro,' or mount, and it is after this that the city is named. Monte Video means literally 'I see a mount,' and it is said that the look-out man of the pioneer vessel called this out when the Cerro came into sight—hence the name.

FORTALEZA DEL CERRO—MONTE VIDEO.

The city dates back to 1724, and is the seat of government and the capital of the Republic of Uruguay. It has a population of about 180,000. The total population of the Republic of Uruguay is about 900,000, and the area 186,000 square kilometres. The land does not present any great elevations, nor extensive tracts of level ground.

There are eight lines of railway :—

1. The Ferro-carril Central del Uruguay (Central Uruguay Railway), running between Monte Video and Rivera, and passing through Florida, Durazuo, and San Fructuoso.

2. Ferro-carril a Nico Perez, passing through Soledo and San Ramon

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3. Ferro-carril a Minas.

4. Ferro-carril de Maldonado and Punta del Este.

5. Ferro-carril del Norte, between Monte Video and the rock of St. Lucia.

6. Ferro-carril del Oeste, from Monte Video *via* San Jose to Mercedes

7. Ferro-carril Midland o Mediterraneo del Uruguay, to Paysandu and Salto,

8. Ferro-carril Noroeste, from Salto to Santa Rosa, with a branch to San Eugenio.

The principal exports are live stock, horses, mules, oxen, sheep, wool, jerked beef or charqui, hides, extract of beef, slaughter-house products, sealskins, &c.

The value of the exports during 1905 amounted to £6,547,712 as against £8,182,163 for 1904.

Imports in 1905 were valued at £6,548,421 as against £4,514,190 for 1904. These imports consist of foodstuffs, cereals and spices, raw materials and machinery, soft goods, &c., beverages in general, ready-made clothing, live stock (nearly all from the Argentine Republic), tobacco and cigars, timber, and sundries.

Anyone intending to trade with Uruguay should consult the British Consular Report, which for this Republic is excellent, showing the countries from which the imports are derived, and giving a comparison between the trade done with Great Britain and the several other countries concerned.

In the neighbourhood of Monte Video, and on the

NOTE.—A railway from Nico Perez to Centurion is now under construction. During 1905 a Belgian Syndicate undertook the working of all the railways in the province of Rio Grande do Sul and to connect their system with the Central Uruguay Railway, thus extending the line right up into tropical Brazil.

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River Uruguay, there are a number of 'saladeros' including, in the latter vicinity, the establishment belonging to the Liebig Extract of Meat Company at Frey Bentos. This employs a large number of men, and loads at its wharves about 100 vessels a year with its own produce for Europe.

RANCHOS—MONTE VIDEO.

The number of cattle slaughtered at the 'saladeros' exceeds 600,000, of which about 150,000 are used for Liebig's extract; and, in addition, a large number of sheep and 60,000 to 80,000 mares are killed annually.

Having inspected the saladeros at Buenos Aires, we did not think it necessary to visit those in Uruguay. The process followed is much the same, and really saladeros are not the most pleasant places to inspect.

The climate of Uruguay, or the 'Banda Oriental'

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as it is known, is excellent, and the language spoken is Spanish, as in the Argentine Republic.

Steamers leave almost every evening from Monte Video for Paysandu and Salto, and, as the scenery of the Uruguay is very beautiful, this forms a pleasant trip.

There are extensive coaling depôts at Monte Video, and the port is well supplied with lighters.

Our illustration will shew the class of lighters used, which, owing to the rough sea in which they are frequently required to work, are of necessity very strong, though not so convenient for loading and discharging as ordinary lighters without masts would be.

Monte Video is a clean city, with many pretentious buildings, an interesting cathedral, good hotels, and an excellent system of tramways. On Sunday afternoon

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all kinds of carriages are requisitioned to take the élite out to the Prado or park. Here they alight, and the men line the circular avenue in the neighbourhood of the refreshment buffet; whilst the ladies, beautifully dressed, walk round and exhibit themselves to the best advantage. They did not seem at all abashed by the ardent glances of the sterner sex, a great number of whom rendered their inspection much more severe and trying by the use of field glasses. There is a splendid seaside resort at Pocitas, which is largely visited in the summer, and there was ample evidence that the Uruguayans know well how to enjoy themselves. There are also plenty of cafés, in which one can drink 'yerba matté,' or Paraguayan tea, the favourite beverage of South America, and it seems strange that no serious effort has been made to introduce this drink into Europe. It is supposed to be much more beneficial than our tea, and should be very much cheaper. It may be that the duties on ordinary tea would be applied to this South American counterpart, which would, added to the freight and other charges, interfere with the sale to any large extent. It is prepared by placing the crushed leaves of the yerba tree—a species of holly, and the leaves, crushed, really look more like dust than anything else—into a gourd, and then pouring in boiling water. The tea is imbibed through a 'bombilla,' which is placed in the gourd, surrounded by such large pieces of yerba as can be found before adding the

S. E. BATTLE Y ORDÓÑEZ,
President of Uruguay,
1906.

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water. The gourd is then passed round the assembled company.

Matté is shipped in bags of raw hide to Chile and other South American Republics.

There are many places in Paraguay, within a comparatively short distance from Monte Video, where one can get away from the European element altogether. Caacupé is one of these delightful places,—a sort of South American Lourdes. Every year there is a pilgrimage to this charming village. Caacupé has a

CHURCH AT CAACUPE, BUILT IN 1770.

population of about 3,500, and is situated in the Cordillera Hills. It is approached *via* Asuncion, and the great feast of the Immaculate Conception of the Blessed Virgin takes place annually, on the 8th of December. An Englishman we met in Monte Video, had made the pilgrimage (we are indebted to him for the photo reproduced), and he spoke in terms of

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great praise of the beauty of the Paraguayan scenery, and the interest attaching to the religious pilgrimage. The church is quite out of proportion to the rest of the village, and will hold about 1,500 people. There are piles of stones outside which have been brought on the heads of devotés not able to contribute money, and some of the stones weigh as much as thirty pounds. The tradition is that some years ago it was decided to take the figure of the Virgin to Asuncion, and it was removed in a bullock cart for that purpose by devout priests. The first night they camped among the Cordillera Hills, but in the morning, just as they were about to resume their journey, they found to their dismay that the beautiful image had disappeared, and on their hurrying back to Caacupé, it was found standing serenely in its old place in the village church. Other similar attempts were made, but with the same result. Over 20,000 people take part in the procession. During festival time the floor around the Virgin is two to three inches deep in paper money, of values ranging from 5 cents to 100 dollars. The pilgrims live in carts, or construct rude huts out of the branches of trees.

One of our party had made the journey to Asuncion, and would have liked very much to have renewed the experience, but time again intervened, and we had to depart for the Falkland Islands instead.

We cannot close this chapter without alluding to the kind hospitality we received both in Argentina and Monte Video. Everyone we met seemed to be ready to give us the 'glad hand,' as our North

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American friends say, and to do something to make us forget we were in a foreign country. The table would be decorated with roses, and the menu would include some well-known English dish, evidencing, in a delicate and much appreciated way, the kindly thought and care of the host and hostess.

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CHAPTER XIV.

TOURS BETWEEN RIVER PLATE AND STRAITS OF MAGELLAN. PATAGONIAN PORTS SOUTH OF BAHIA BLANCA. SAN BLAS. PATAGONES. SAN ANTONIO. PORT MADRYN. PUERTO PYRAMIDES. CABO RASA. ATLAS POINT. BAHIA CAMARONES. TILLI ROADS. DESEADO. SAN JULIAN. SANTA CRUZ. RIO GALLEGOS. SAN SEBASTIAN. PUERTO COOK. USHUAIA. LA PATAIA. MONTE VIDEO TO THE FALKLANDS. GULF STREAM. PORT WILLIAM. PORT STANLEY. FALKLAND ISLANDS COMPANY. FALKLAND ISLANDS.

WE left the River Plate by the R.M.S. 'Iberia,' on the 30th of October, 1900, bound for the south,

SAILING SHIP IN MID OCEAN.

and despite the hospitable treatment everywhere accorded to us on shore, we again felt it a pleasure to get on British 'territory,' if we may use the term.

We had had a very busy time at the River Plate, and were glad to get the rest which is always obtainable at sea.

Considerable interest was caused in the clubs at Buenos Aires and Monte Video, just before we left,

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by the prospect of summer tours from the Plate to the Falkland Islands and Sandy Point, in the Straits of Magellan, during the hot season, at low rates, and a number of people availed themselves of the facilities afforded. There are not wanting signs that the whole of the beautiful scenery of the Straits, and the famous Smyth Channel will, before long, be placed within easy reach of the tourist from the Plate. We deal in the next chapter with our voyage through this wild and grand scenery, and will therefore not anticipate it except to point out that, with co-operation at the Plate, a regular system of tours, occupying a few weeks, during the summer months, might be arranged with considerable advantage to all lovers of strange and rare sights.

The coast of Patagonia is low lying, and one sees nothing of it on the voyage to the Falkland Islands; but although we were compelled to pass it at sea, we do not think this book would be complete without some reference to the ports of Patagonia which are now being opened up principally by German energy and enterprise. Patagonia is still to a great extent in a state of nature, though, of late, land has been taken up largely, and 'estancias' are springing up here, there, and everywhere. The 'largest of birds,' and the 'longest of men,' as one writer puts it, flourish in this country, the latter loving their native land as well as if it were a better one.

There are salt lagoons and large barren tracts of land, but there is also plenty of land with good soil, and capable of producing almost anything.

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A good many Chilian farmers have been taking up ground in the Argentine territory, as the tenure there is more certain than in Chile. It is certainly unpleasant, to put it mildly, for the farmer to find himself, at the end of every ten years, competing possibly with one of his labourers, and paying doubly for the improvements he may have effected during his term of occupation.

The ports south of Bahia Blanca are :—

San Blas.	Camarones.
Patagones.	Rada Tilly.
San Antonio.	Puerto Deseado.
Port Madryn.	San Julian.
Pyramides.	Santa Cruz.
Cabo Rasa.	Gallegos.

Argentine Tierra del Fuegan ports :—

San Sebastian.	Almanza.
Isla de los Estados (Staten Island).	Ushuaia.
Almirante Brown.	Lapataia.

At most of these ports there are no Customs' authorities, and no shed accommodation for cargo, neither are there docks, wharves, nor lighters to facilitate loading or discharging, and there are no stevedores to engage. Steamers employed in the trade have, therefore, to carry boats or lighters suitable for the discharge and loading of cargo, and have a small steam launch and a sufficiently numerous crew to work the cargo in and out at southern ports of call. All cargo is stored on the beach, and remains there until claimed.

PORT SAN BLAS.—Very good port for a small

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steamer, there being a pier 100 feet in length, alongside which vessels drawing 20 feet can lie. There are also two piers for gravel boats.

PATAGONES.—The bar at this place is in bad condition, there being only 12 feet of water, but there are good prospects for the port. The Rio Negro will, in the near future, be a large producer. A small government steamer ascends the river, and two steamers of very light draft are being put on to develop the up-river traffic.

SAN ANTONIO.—Not a very good harbour, but there are some lighters in the port.

PORT MADRYN.—Good anchorage at about 800 to 1000 yards from the coast. A mole exists, belonging to the railway company, where craft of light draft can perform operations during good weather, and it would probably be an easy matter to prolong it or to build a new one, enabling large boats to lie alongside with the wind off shore. When the wind blows on shore, it raises such a high sea that loading and discharging have to be performed with lighters. The entrance to the port is safe, and work can be carried on almost always unless the weather be very bad or the wind strong from E. to S.E. There is sufficient depth of water for any draft. Very few buildings (railway station, sub-prefectura) can be seen from the roads. Fresh water very difficult to obtain. Fresh meat can be procured, but no vegetables. There are generally one or two sailing vessels in the roads. The Chubut railway runs from this port. Much dissatisfaction has been felt by the Welshmen inhabiting the Chubut

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district, owing to alleged improper treatment on the part of the Argentine Government, and a number of them have recently emigrated to Canada. There have been frequent inundations in this district, resulting in loss to the settlers, and this loss, coupled with too stringent regulations and taxation, has disheartened what was, at one time, considered to be a very thriving colony.

There is no doubt that these South American Republics—all absolutely requiring immigrants to develop the latent resources of their country—do not take a broad enough view of the situation, putting forward restrictions and hindrances in place of facilities and encouragement.

PUERTO PYRAMIDES.—This is a good roadstead, and a mole is being built by the principal merchant in the district. He has a railway in connection with his salt works, and the Salt Company has lighters. There is much room for the development of the salt trade at this port.

CABO RASA.—Very poor anchorage about 500 to 600 yards from the coast, and much exposed to wind from N. to E. and S.S.E. It would be very difficult to construct a mole at this port to resist the heavy seas, and loading and discharging can only be carried on under difficulties by means of ships' boats. There is a warehouse on the beach. Water and fresh meat are very difficult to obtain, and no vegetables exist, but fish can be had in abundance. There is sufficient depth of water for large boats.

ATLAS POINT.—Very good slates obtainable here, but port requires to be surveyed.

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BAHIA CAMARONES.—Bad anchorage about 700 to 800 yards distant, exposed to winds from N. to E. and E.S.E., which raise such seas as would make the construction of a mole very difficult, and operations can only be effected by ships' boats.

There is a 'galpon' or shed on the shore, but no inhabitants anywhere near. The navigation between Cabo Rasa and Camarones is rendered difficult by strong currents and sunken rocks. Fresh water and meat very difficult to obtain. No vegetables. Depth of water considerable.

Imports general goods from Buenos Aires, and exports wool.

TILLY ROADS (Rada Tilli).—Very difficult to locate from the sea owing to entire absence of buildings. Bad anchorage 700 to 800 yards distant, exposed to heavy seas raised by wind between N.N.W. by E. to S. Surf is apparently always breaking on shore, even during calms and off-shore winds. Provisions impossible to obtain. Sufficient depth of water for any sized vessel. Loading and discharging always difficult, and this by ships' boats. It would be almost impossible to build a wharf here strong enough to withstand the seas.

PUERTO DESEADO.—Entrance narrow and dangerous owing to strong current and sunken 'Beagle' rock. Not prudent to enter with wind from outside. Anchorage inside, about 500 to 600 yards from coast. Strong current. Operations are carried on by ship's boats, but it would not be difficult to construct a mole. Only a few buildings visible—sub-prefectura, etc. Fresh water difficult to obtain, but meat can be had.

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Sufficient depth of water, but very little space. It is believed that this port was discovered by Fernando de Magellanes, in March, 1520, as he anchored in a bay with a narrow entrance to the north of St. Julian, and gave it the name of 'Los Trabajos,' on account of the severe labour imposed on his crew by the bad weather experienced there. The bay was next entered by the English navigator, Thomas Cavendish, on December 17th, 1586, and he named it 'Desire,' after one of his ships. On Christmas Day the sailors, who were on shore, were attacked by the natives, and some of them were killed with arrows. Two English navigators, who visited the bay in 1671, declared it to be a British possession, but neither of them left any establishment to maintain the right claimed.

The Argentine Government, a few years ago, sent down a commissioner to inspect the lands around this port, with a view to the formation of a town, but what the result of this is we are not able to say. There are, however, about eleven families living near the bay, possessing amongst them about 30,000 sheep, 2,000 horned cattle, and 1,200 horses. The cattle run wild, and when it is desired to kill any, they have to be hunted with horses. The camps will not feed more than 1,000 sheep per square league. The land is not good for agriculture, except in the ravines or 'cana-dones,' where there is drinking water, and protection from the strong south-west winds, which blow almost constantly in the spring and summer. Spring begins in September, and sheep-shearing is commenced about October 20th.

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According to the 'South American Pilot':—

'The entrance to the bay is picturesque, and the 'hills, of red porphyry, contrast agreeably with the 'luxuriant vegetation, the high banks of clay and 'sand, and the pebbly beach. This slopes rapidly 'to the sea, and at low tide is uncovered to the 'height of eight or ten metres. The bottom of the 'estuary is then seen to be strewn with reefs and 'banks of stone.'

SAN JULIAN.—Good wool port, sheltered, seven to eight fathoms inside, but owing to bar, vessels have to wait for the tide. Small town; no lighters. There are large estancias in the district, and the port is an important one, and will improve. A mole, alongside of which a steamer could go, could easily be erected. The port is in a river. Lighters are required.

SANTA CRUZ.—Outside bar can only be crossed at high tide,—35 to 40 feet rise and fall of water. Anchorage inside about ten miles, said to be good, and at about 700 to 800 yards from the bank. Operations difficult on account of strong current, but mole could probably be built without difficulty. The beach is entirely of coarse gravel, and at present goods are carried by ships' crews from the boats to high water mark, where it is customary to receive. Population about 250. Several large business houses have been established, chiefly from Punta Arenas, in the Straits of Magellan. There are a number of 'estancias' in the neighbourhood. Wool is sent from this port to Punta Arenas and Buenos Aires. Fresh meat and water can be obtained. There is sufficient depth of

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water for large boats. The government has made a survey up to the lakes, and the river is navigable at all times by barges drawing seven feet.

RIO GALLEGOS.—Good port, with a tremendous rise and fall of water; sandy bottom; gravel beach. The town is situated 10 miles from the mouth of the river, and anchorage 700 to 800 yards from the bank. A mole exists, but has never been used, as it is high and dry at low water. It could be prolonged, and would prove useful for big ships. Population about 1,000, and the town is the seat of government for the territory. There is a good business with Punta Arenas, all wool being shipped there. Fresh water and provisions of all sorts can be obtained. A pontoon of 500 tons is anchored in the river. Sufficient depth of water, but not much room.

SAN SEBASTIAN.—Not very good anchorage, but a mole might be built. Only two houses visible. Fresh water and provisions difficult to obtain. Sufficient depth of water and room.

PUERTO COOK (prison).—Not more than 200 people on the whole island. There is a lighthouse, but it is not a good one. Gales and fog are almost always prevalent round the island. Operations by ships' boats.

USHUAIA.—An excellent port, with sufficient depth of water, but navigation in the channels is difficult. The existing mole is old and useless. A fair quantity of timber is exported. Population about 400. Fresh water and meat can be obtained.

LA PATAIA.—Situated about 20 miles from

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Ushuaia—exports timber. Good port, with ample depth of water. Government coal depôt. Fresh water to be had, but provisions difficult to obtain.

The voyage from Monte Video to the Falklands occupies about four days, the distance being 1030 miles, and it is very refreshing after the hot weather in the River Plate. There was a lively company on board the 'Iberia,' and the time passed very pleasantly. Cricket, of the 'tip and run' kind, was much indulged in, and proved to be very amusing. There is no doubt that this is a better game on shipboard than the orthodox one.

There was also a good story-telling party on board, so that when everything else failed, there were plenty of yarns to the fore.

As we were approaching the Falklands there was considerably discussion anent the difference in temperature there as compared with Great Britain, which is practically in the same latitude. Of course, the theory advanced by Maury, in his 'Physical Geography of the Sea,' was brought forward that the soft climate of both France and England would, were it not for the influence of the Gulf Stream, be as that of Labrador, severe in the extreme and icebound. 'Every west wind that blows,' says Maury, 'crosses the stream on its way to Europe, and carries with it a portion of this heat to temper there the northern winds of winter. It is the influence of this stream upon the climate that makes Erin the emerald isle of the sea, and that clothes the shores of Albion in evergreen robes, while in the same latitude on this side, the coasts of Labrador are

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fast bound in fetters of ice.' He describes the Gulf Stream as follows :—

'A river in the ocean. In the severest droughts it 'never fails, and in the mightiest floods it never over-'flows. Its banks and its bottoms are of cold water, 'while its current is warm. The Gulf of Mexico is 'its fountain, and its mouth is in the Arctic seas. It 'is the Gulf Stream. There is in the world no 'other such majestic flow of waters. Its current is 'more rapid than the Mississippi or the Amazon, 'and its volume more than one thousand times 'greater.'

The opinion that came to be most generally received and deep rooted in the mind of sea-faring people, was the one repeated by Dr. Franklin, and which held that the Gulf Stream is the escaping of the waters that have been forced into the Caribbean Sea by the trade winds, and that it is the pressure of those winds upon the water which forces up into that sea a head as it were for this stream. The difference of temperature is from 20° to 30° F. between its waters and those of the ocean near by. The hottest water in the Gulf Stream is also the lightest; as it rises to the top it is cooled both by evaporation and exposure, when the surface is replenished by fresh supplies of hot water from below. Off Cape Hatteras 80° on top, 57° 500 fathoms deep.

This theory, so well expressed by Maury, and appealing to the popular taste, was taught as 'gospel' for nearly half a century, but of late years it has been vigorously attacked, and, in the opinion of scientific

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men, utterly destroyed by German and other oceanographers, who have proved, beyond doubt, that the Gulf Stream ceases to exist before reaching mid-Atlantic. In fact, it has been clearly demonstrated by soundings that the Gulf Stream disappears as a distinct traceable current a little to the south-east of Newfoundland, and altogether in mid-ocean.

On the voyage from Liverpool to New York, the course followed by the mail steamers undoubtedly strikes the waters of the Gulf Stream on the fourth day out, the difference in the temperature, especially of the bath, being very noticeable. The sea temperature was frequently taken on board when we expected to get into the stream, and there is also a quantity of drift matter which indicates its presence.

An excellent article on this subject appeared in the June (1902) number of Scribner's Magazine, entitled, "The Gulf Stream Myth and the Anti-Cyclone," by Harvey M. Walls, of Philadelphia, and the writer of it shews in plain, unscientific language, how the theory of the effect of the Gulf Stream on British climate failed to appreciate the influence of the drift of atmosphere in determining the nature of weather and climate. It is not a sea current, but the prevailing air current blowing from the Atlantic, that gives a genial character to the climate of the British Isles.

Professor Cleveland Abbe, of the United States Weather Bureau, sums up the modern belief as follows :

'1. The circulation of air in the north-eastern 'part of the Atlantic Ocean, determines the mild

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'climate of Western Europe, by distributing the 'moisture and warmth of the Atlantic Ocean surface 'as a whole, and not that of the Gulf Stream, since 'there is no apparent Gulf Stream in these latitudes.

'2. The warmth of the south-west winds of 'Europe is due to the moisture they contain, which 'gives up its latent heat when it becomes cloud and 'rain. The winds take up this moisture from the 'surface of the ocean when the latter is warmed up 'by the sunshine, and they would do the same if 'there were no Gulf Stream in the Straits of 'Florida.

'3. The effect of the transfer of warm water to 'the shores of Western Europe by the Gulf Stream, 'is inappreciable as compared with the transfer of 'moisture, cloud and warmth by the wind; in fact, 'observations fail to shew that there is any warm 'water transferred to Europe by the Gulf Stream.

'4. The Gulf Stream is the result of the inter- 'change of water between the cold northern and the 'warm equatorial portion of the Atlantic Ocean; 'but, as modified by the rotation of the earth on its 'axis and the effect of the winds, the solid stream 'flowing past Florida is a deep-sea current inap- 'preciably affected by the opposing north-east wind 'at the surface.'

With such interesting subjects for discussion, and a good library on board, time did not hang in any way, and we arrived at Port Stanley, in the Falklands, just as we were beginning to thoroughly enjoy ourselves. It was a Sunday morning, and the cathedral

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bells were ringing. Never has the sound of church bells borne over the waters been more pleasant or welcome. They seemed to speak to us of dear old

PORT STANLEY.

England, and our own particular homesteads, and all that is implied in those well-worn though none the less beloved terms. And a fine cathedral we found it to be in this out-of-the-world place.

The entrance to the outer port (Port William) is marked by a light-house on Cape Pembroke, which is maintained by the Imperial Government. No light dues are charged. Pilotage is compulsory, though mail steamers are exempted. The port should only be made in daylight, as it requires careful navigation, the entrance being narrow and dangerous.

There are four piers in the harbour (two of which

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belong to the Falkland Islands Company, which have a depth of about 14 feet of water alongside. The rise and fall at spring tides is seven feet. The Falkland Islands Company has stations at Darwin Harbour, Walker Creek and North Arm on the East Falkland Island. The imports consist of general goods, such as provisions, clothing, building material, ships' stores of all kinds, and material required for sheep farming, such as fencing, timber, dip, &c.

The exports consist solely of the produce of sheep farms, wool, sheepskins, tallow and hides; and during the season some six to seven thousand bales of hydraulic compressed wool, and one thousand barrels of tallow, are shipped to England. The value of the exports in 1901 was £108,294, and of the imports £74,765.

The Falkland Islands Company have a powerful tug in the harbour, capable of towing vessels of any size, and also a number of lighters and hulks. The tug is fitted with salvage pumps, capable of flooding a ship and pumping out. All kinds of ships' repairs are effected in the port.

Practically the whole of the land in the islands is taken up, so that there cannot be any development in trade worth talking about. The government were, however, busy preparing a naval coaling depôt in Port Stanley, and the islands will derive some added importance from this fact.

The bay is surrounded by low-lying hills, covered with brown moss and grass, and in the back-ground, the hills jut out, somewhat higher, in light slatey-

NOTE.—The Naval Coaling Depôt, after a large sum had been expended on it (report says £40,000 to £50,000), was abandoned, with other similar schemes elsewhere.

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coloured masses, slightly tinged with blue by the intervening atmosphere.

The Falklands are east and west islands, and there are about twenty-four settlements on them, the principal being the company already named. The total population is about 2,050. The settlements have amongst them 700,000 sheep, which are reared purely for the wool, and each season the old sheep are killed off and reduced to tallow, or to use the technical expression—'tried down.' The pasturage in the Falklands is not very good, and about five acres are needed per sheep. Live sheep used to be shipped from the islands, but, strange to say, the British Agricultural Board have made laws which class the Falklands as a part of South America,—a nice way to kill our own business! The city or port of Stanley,—population about 800,—is just like a small town in the Scottish highlands, and certainly one heard the Scotch accent everywhere. It is a clean, treeless town, unless a few stunted specimens may be classed as trees. In fact, the wind is so strong continually, that if trees are to be grown high fences to protect them will be needed. Most of the houses are made of timber. There are several inns with comfortable accommodation, and we got a good dinner of what is known in the islands as 'good old 365" (mutton every day in the year) at the inn bearing the remarkable name 'First and Last.' A wag on board rechristened it the 'Fast and Loose.' Certainly we found an old travelling companion there who made us welcome, and we had a merry and excellent repast.

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CHAPTER XV.

STEAMER DUCKS. PENGUINS. CORMORANTS. BELT OF ORION. MAGELLAN. CAPE VIRGINS. ESPIRITU SANTO. STRAITS OF MAGELLAN. PUNTA ARENAS (SANDY POINT). RIDE TO THE LORETO COAL MINE. GOLD WASHERS. INDIANS. EMU. GUANACO. CONDOR. PUMA. SEA OTTER. PATAGONIANS. TEHUELCHES.

LEAVING Port Stanley we saw some 'steamer ducks' which, frightened by the appearance of our vessel, paddled through the water at a surprising speed. These ducks can neither fly nor swim, but use their wings as paddles,—hence the name 'steamer duck.'

A number of passengers came on board at Port Stanley bound for Sandy Point (Punta Arenas), in the Straits of Magellan, and, shortly after leaving there, we had a further addition to our number, in the advent of a little stranger in the steerage. Whether the youngster was christened after the ship or not we cannot remember, but certain it is that this fashion is frequently followed under similar circumstances, and we know of quite a bevy of young ladies who are named after P.S.N.C. steamers. Fancy Mrs. Corcovado introducing the Misses Antisana, Orellana, Oravia, and Orizaba Corcovado at a town hall function, and what the boys would think. Poor children—the parents have much to answer for.

There was plenty of kelp floating near us, indicating the presence of rocks, and we saw quite an army of penguins making their way through the

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water, and creating quite a wave of their own. They swim in pairs, maintaining apparently an equal distance between each couple, and they get through the water at a rapid pace. We hoped to see a large gathering of them on shore, but night came on so suddenly that we were disappointed. There are thousands of them on the island, and they walk about in pairs in a very ungainly fashion, as they are naturally more at home in the water.

The next item of interest which favoured our vision took the shape of a number of cormorants, which were also in couples. In appearance they resemble wild ducks, but they are evidently not endowed with much ability. The fun consisted in watching them crossing the bows of the steamer. They could quite easily have gone astern, and saved half a mile or more of flight, but they had the idea that they must go in front. Whether it was the smoke from the funnel, curiosity, or some other cause, we could not tell, but invariably they would struggle hard to catch up to us and then cross ahead.

We next came in sight of the wreck of an American sailing vessel which, a few years back, dragged from her anchorage in a storm, and got across the rocks at the entrance to the outer port. Her masts are still partly standing, and her hull lies waiting only for the swelling seas to complete their work of destruction. Her beautiful lines added a touch of pathos to her sad picture, and told anew the sorrowful tale of the deep. No strength, no human skill, no beauty, suffices to avert the destruction which is the inevitable end of all things.

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The day closed in with a brilliant sunset, a purple, gold and green effect, with fine clouds and the gold running down into the sea like a curved road of light. The night which followed was memorable on account of its clearness. Lighted with stars innumerable, it was as bright almost as day, and the Belt of Orion and the Southern Cross were readily distinguishable. The passage from the Falklands to the entrance of the Straits of Magellan—a distance of 480 miles—occupied 37 hours, and there was a high sea running as usual in these latitudes.

At four o'clock in the morning, we entered the famous Straits, discovered by the great navigator, Magellan, in 1520. Magellan was a Portuguese, and the honour of his achievements should have passed to his own country had it not been so sparing in its rewards for past services, and slow to encourage him in the undertaking he proposed of making a voyage round the world. Spain, however, always to the front in those early days in enterprises of discovery, involving adventure and great hardships, was not slow to accept Magellan's proffered services. In 1519 he left Seville, and sailing westwards discovered the Straits in 1520, and his discovery has left a lasting testimony to his skill and courage, but, as Prescott says, 'the veil was not yet raised that hung over the golden shores of the Pacific.' It is a matter of regret that so soon afterwards Magellan was to pay the penalty of his intrepidity in an untimely death at the hands of hostile natives at Cebu, Philippine Islands, whence he proceeded after clearing the Straits. The Magellan

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Straits seem to be a provision of heaven against the stormy passage round Cape Horn, and as a matter of fact it was discovered first, and was for a time thought to be the only passage from the Atlantic to the Pacific. Magellan's voyage through the Straits occupied twenty-eight days. Now steamers go through in 48 hours.

Cape Virgins (135 feet high) commands the north-eastern entrance to the Straits, and is visible at a distance of from twenty to twenty-five miles. The south-eastern point is named Cape Espiritu Santo, the distance between the two capes being about twenty-two miles. Cape Virgins and Cape Espiritu Santo have certain points of resemblance, both being marked with white cliffs, and both having low shingle points connected with them, which reduce the width of the entrance to fourteen miles from point to point. In describing the Straits of Magellan as far as the entrance to Smyth Channel, I shall, to a small extent, have to follow the same lines as in my chapter in a previous work on this subject, adding, naturally, the impressions and facts resulting from my recent voyage. Espiritu Santo is 190 feet high, and is the seaward termination of a range of hills, varying from 200 to a little over 900 feet in height, which extends N.E. and S.W. at the back of the promontories which form the Narrows as far as Cape Boqueron, opposite Port Famine. The highest part of this range terminates in Gap Peak, which rises 925 feet above the sea, between the First and Second Narrows. Cape Espiritu Santo does not show as an extreme until

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inside the Straits, but if seen from seawards, its appearance is remarkable and unmistakable as being the highest part of a line of white cliffs, indented by bays which, at a distance, give it the appearance of having had 'gaps' cut in it.

From Cape Virgins (originally named by Magellan the 'Cape of the Eleven Thousand Virgins') to the passage known as the First Narrows, the land on the north side is more undulating than at the Cape and is covered with grass, though not of a green kind. Indeed, both sides of the Straits seemed to us, in the early morning, at this point to be somewhat uninteresting, and the hills and slopes were brown in colour. The entrance to the Narrows resembles a large gateway. There is a rise of water here of about fifty feet at spring tides. These Narrows are nine miles long by two miles wide navigable.

Proceeding from the First Narrows for a distance of eighteen miles, and through Philip Bay, we reach the Second Narrows. These are twelve miles long, and vary in width from three to four miles navigable, and there is a rise in the water at spring tides of twenty-three feet. The course through these Narrows is fairly direct, until the point of Cape St. Vincent (so called from its similarity to Cape St. Vincent in the south of Portugal) is reached. From this Cape, for some twelve to fifteen miles, the direction taken is, owing to a number of shoals and small islands, very circuitous. Thence to Punta Arenas (Sandy Point) a fairly direct course is steered. In clear weather, long before Sandy Point or Punta Arenas is reached,—

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indeed before the steamer gets through the Second Narrows,—the high mountains on Dawson Island and Mount San Felipe can be seen, forming an apparent barrier, blocking up the passage, and over the latter the summit of Mount Tarn stands out in bold relief against the sky.

There was a high sea running during our passage through the Narrows, and it was curious to observe the 'tide rips' at various points, causing the sea to appear as if boiling. There is always a great race of water in the Straits, and we were carried on rapidly to Punta Arenas. After passing the Second Narrows, Elizabeth Island, so named by Sir Francis Drake, came into sight. At Cape Negro, about fourteen miles from Punta Arenas (Sandy Point), the last southerly spur of the Cordilleras, which run along the coast and join the main ridge beyond the port named, came into view. All these spurs are clad with beech forests and thick underwood of the magnolia species. Before we arrived at Sandy Point, the Straits had become beautiful, especially on the north side. Away in the distance could be seen snow-clad mountains, running up into the sky in various and picturesque forms, and the bright sunny day with which we were favoured shed a glamour over the whole scene. A few small white birds (possibly slightly grey) known as ice birds, and a number of wild ducks, crossed our bow, whilst in the water beneath we caught at times glimpses of marine monsters, but of too cursory a nature to give them a name.

Our ship had now come to an anchor off Sandy

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Point, where we had determined to disembark, in order to make the journey thence through the Smyth Channel to Corral.

There is a public mole at the port; ocean-going steamers cannot go alongside this, but lie at anchor about half-a-mile off. The mole having now been extended, coasting steamers make use of it at any time of the tide. Its total length is about 600 feet, there are three lines of rails running along it, and it is equipped with a small steam travelling crane capable of dealing with weights not exceeding two-and-a-half tons. Another pier, belonging to the Chilian Government, is used for landing and embarking passengers. There are several steam tugs, and a number of launches and hulks for cargo purposes; also sheds adjoining the mole in which cargo is deposited. The wool shipments from Punta Arenas amount annually to about 25,000 bales. A large quantity of tallow is also shipped to Chile and Europe.

For salvage operations, there are several small steamers belonging to the port, and three pumps—two 12-inch and one 13-inch. There are also two or three experienced divers. Messrs. Lion and Co. have a repairing shop, and can make castings up to two-and-a-half tons; but they were in hopes, when we visited their establishment, of improving their plant, and of casting up to five tons. They also roll small plates up to an inch in thickness.

The population of Punta Arenas is rapidly increasing, and is now about 10,000, and there is no doubt that in the course of the next decade, it will rise

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PUNTA ARENAS—STRAITS OF MAGELLAN.

considerably in importance, especially if left, as it now is, as a colony and 'free' port. In Chapter IV. we alluded to the coal in the district, and as our ride into the country to the Loreto Mine may be of interest, we shall later give a description of it. Sandy Point is about 120 miles distant from Cape Virgins, and is officially known by the Chilians, to whom it belongs, as 'La Colonia de Magellanes.' It was simply a convict settlement up to the year 1877, when it was disestablished, in consequence of a revolt of the convicts and its great distance from Santiago—the seat of Government.

Sandy Point is the most southern town in the

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world. It has a number of good though small hotels, several churches, a 'plaza,' club, racecourse, theatre, and numerous streets, which take right angular form, and extend in some instances from half-a-mile to a mile. The streets are wide, but for the most part unpaved. There is a resident governor and a municipality with two 'Alcaldes' (mayors), and there are also two banks.

The houses are chiefly built of timber, with corrugated iron roofs. The growing prosperity of the port is due to the rearing of sheep and cattle, which goes on both in Chile and in Tierra del Fuego, and it is the centre for the wool shipments in the Straits. At the farms it is found more convenient to use hand than hydraulic wool presses, inasmuch as the wool has to be carried long distances, and the men can only deal with bales of a handy size, say not exceeding 400 lbs. weight. There are factories for jerked or dried beef (Charqui), smoke-dried mutton, and soap, and it is contemplated shortly to open up a refrigerated establishment to enable mutton to be shipped to Europe. The sheep, like the Indians who inhabit these regions, are of a very large kind.

Although we had a little snow at Sandy Point, the weather was very favourable during our stay, and selecting one of the finest days, we made a party of six for a ride to the gold washings on the Rio de la Mina, and to the Loreto coal mine. We were all comfortably mounted on very good horses, and a boy was sent on ahead with provisions.

Leaving the town, we passed through the remains of a forest which had extended for miles around, but

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which, owing to the ravages of fire, was now reduced to a few trees scattered about here and there, whilst the charred remains of many a good tree encumbered the path. Just on the outskirts of the town, we passed what is known as the brewery, where an Austrian has established himself and formed a veritable 'bier garten.' The brewery supplies the town with lager beer, and has commenced to export. After passing the brewery, we encountered our first difficulty in the shape of the stream, and it took us some little time before we could find a bank on the opposite side to mount by. Then over we went, the horses taking to the water as to their native heath, and cantering across a field of calafat scrub,—which is prickly and certainly irritates the horses,—we reached a bullock cart track. Then, as the greensward opened out a little, and the road improved, we set off at a swinging pace, which in the keen frosty air was most exhilarating. We were soon, however, brought up by the scrub and the river. The horses were unshod and very sure footed, and the manner in which they picked their way over the stony bed of the river—sometimes almost up to the saddle-girth in the water—was simply splendid. At places the current was rapid, and the bottom invisible, but the horses were used to the water, and the simplest plan was to drop the reins upon their necks, and let them work their own sweet will. Indeed the South American horses resent a tight rein, being trained to a loose one, and the slightest touch of the ribbons is sufficient to guide them. We were all pretty well splashed going through the river, but we

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forgot this in the excitement of climbing banks and overcoming all kinds of impediments. The trail we followed was an extremely faint one, and we were frequently led into impasses and boggy ground, and had to go back upon our own tracks. Once or twice the horses absolutely refused to progress, but as we trusted to their instinct, we sought another way. We crossed and re-crossed the river so many times that we quite lost count. At last we got on to the old railway track leading to the coal mine, and away we went at a gallop, the horses puffing and snorting, until we were brought up by a deep cutting. After negotiating this in safety, we continued to pick our way further, crossing and re-crossing the stream continually, the horses occasionally refreshing themselves with a draught in passing. The sides of the gorge through which the river flowed were continually closing in upon us as we advanced, and the low mountains were becoming steeper and more beautiful; the trees, which here grow in abundance, being dressed in their rich spring foliage and sparkling in the brilliant sunshine. Soon we came across a camp of miners and men engaged in making a fresh railway to the Loreto mine, work at which was soon to be restarted under the potent influence of fresh capital from Chile. Then, winding round a sharp turn, we came across a gold digger's hut, made with a framework of sticks and covered with sods. Here and there we met an isolated man searching with a shovel for gold in the bed of the river. He would shovel the sand out of the stream, then wash it on the spade, and pick out what shining gold

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dust he could find. These diggers do not now get very much, but we were told they earn the equivalent of a very good wage at the business, and have, besides, the privilege of doing as they please. The gold is exchanged for commodities, etc., at Punta Arenas, and occasionally a miner leaves the country with a fair quantity of gold dust as the result of his labours.

After a ride of about two hours we reached the coal mine, which was also the end of our journey, and were refreshed to see a white tablecloth and a goodly supply of provisions, spread out on the river bank. The ride had sharpened our appetites, and we all did justice to the repast without any moralising. Even the lady of our party, who was ever in the van, and had performed most excellent horsemanship, was gladdened by the sight, and it is remarkable what a fascination a tablecloth has after an excursion, even for the gentler sex, who, as a rule, decry any allusion to food. To see a dainty tablecloth spread in the wilds of Chile, is not an every-day occurrence, and we are not likely to forget the pleasure of our *al fresco* lunch, nor the kindness of the friends who supplied it.

After lunch we climbed up the side of the ravine, beyond the snow patches, to get a view of the mountains in the background of the Straits and Tierra del Fuego, which island we were shortly to visit, and which presented a fair picture in front. The climb was a stiff one, and fortified us, I remember, for a second lunch on our return to the river. Then, handing over the remains of the repast to some diggers, we remounted our horses and started on the return journey. Now,

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we had not been on horseback, prior to this ride, for a long time, and when we got into our saddles after lunch, they seemed either to have hardened or to have lost some leather; but in any case, in warming to the ride we soon forgot our pains, and had no time to think of anything but our immediate difficulties.

The scenery looked almost grander going back, the trees—principally large evergreens with yellow blooms—covering the sides of the gorge from stream to summit. All kinds of evergreens grow here to the height of forest trees, and there is plenty of beech, red cedar, and other timber. Along the trail was what is known as the 'Darwini'—the largest sort of which is, in the season, covered with a reddish orange flower, hanging down in beautiful large bunches. There are also many coloured lichens adorning the boles of the trees, and one creeper which floats in rich festoons from the branches.

We made rapid progress on the return journey, which in character resembled the outward one, and, whenever we got a little open country, we galloped over the soft green moss at a pace which would not disgrace a Derby winner, and which soon brought us to our destination. We saw one or two Indians, but there are really very few of these left near Sandy Point. They come in at times to dispose of skins, and purchase sundry articles of food, etc. There is quite a display of emu (ostrich) skins, huanacho or guanaco, mountain lion, and sea otter skins in the shops, and the prices are not unreasonable. Some of the leading traders at Sandy Point occasionally charter a 'sailer,'

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and send an expedition to the southern islands of Chile in quest of sealskins. These, when obtained, are sent to London, where they are dyed before being made up for sale, as no two skins are alike in colour. The ostrich is farmed in certain parts of Patagonia, and the skins, properly dressed, make excellent carriage rugs. 'The guanaco,' Prescott says, 'roams in native freedom over the frozen ranges of the Cordilleras, where not unfrequently they might be seen scaling the snow-covered peaks which no living thing inhabits, save the condor, the huge bird of the Andes, whose broad pinions bear him up in the atmosphere to the height of more than 20,000 feet above the level of the sea.' The guanaco is one of the four kinds of Peruvian sheep, two of which, viz., the llama and alpaca, are tame, and two wild, viz., the guanaco and vicuna. Someone has described the guanaco as 'having the neck of a camel, feet of a deer, wool of a sheep, neigh of a horse, and the swiftness of the fiend.'

The hotel beds, at least those we saw in Punta Arenas, were each covered with a guanaco skin, which, speaking from personal experience, are of great warmth and comfort in the cold climate experienced there. The skins are yellowish brown on top and white underneath, and the Indians are very skilful in making up the rugs from several skins so that a uniform pattern is shewn. The puma, or mountain lion, something like a small African lioness in appearance, is found right along the Andes from south to north, and their continuation as the Rocky Mountains in North America. It is a cowardly animal, and will only fight when in a tight

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corner. Its head has a very fierce appearance, which rather belies its character.

The sea otter, which is becoming very scarce, is hunted by the Indians, with trained dogs, in the numerous inlets and bays forming part of the Straits of Magellan and the several channels leading from it. Most of the Indians in the neighbourhood of Sandy Point have come over from Tierra del Fuego, though there are still some of the old Patagonians left. They are not perhaps so large as formerly, or possibly, being mostly seen on horseback, they gave the impression of being of a more extraordinary stature than they really were. Their lower limbs do not correspond to the bulk of the trunk. A few years ago a chief and three of his wives were brought over for an exhibition at Earl's Court, London, and they created considerable interest by their extraordinary stature, their enormous busts and fleshy features. 'Patagon,' says E. W. White, in his 'Cameos from the Silver Land,' 'is a Spanish word augmentative of 'Pata,' a paw, and therefore signifies 'large pawed,' 'a term applied by the early Spaniards to the Indians 'of that region, when they first beheld them, with feet 'swathed in guanaco skins. Starting from the Rio 'Negro, its northern limit, to the Straits of Magellan, 'from the Andes to the Atlantic, this triangle (Pata-'gonia) has an area of 372,815 square miles, into 'which Great Britain and Ireland, France, Denmark, 'Holland and Belgium could be packed: inhabited 'by numerous tribes of Indians, numbering perhaps '25,000, of which the chief is that of the Tehuelches,

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'but it is very probable that *all these various families* '*have a common descent from the Araucanians of* '*Southern Chile*, whom the Spaniards were never able 'to subdue, and whose language bears the relation of 'mother tongue to all their manifold dialects.'

Indian women are sometimes employed as domestics at Sandy Point, but they soon die of consumption: whether it be the result of wearing clothes, or is attributable to the closeness of the houses, it is not easy to decide, but certain it is that civilization does not suit them and tends to shorten their existence. Their skin is copper-coloured, their complexions high and their hair black and matted.

When we add that at Sandy Point there is a French café, 'Mira Flores,' and that there is an idea of converting some of the wide streets, already lighted by electricity, into boulevards, it will be seen that the 'Alcaldes' are imbued with Parisian ideas, and, indeed, much is done in this out-of-the-world corner to make life pleasant. There is an agreeable ride or drive to 'Tres Puentes' (Three Bridges), some five miles distant, and which passes the Club Hippico, where the races are held at intervals and are keenly enjoyed. The drive to Tres Puentes along the Straits in the direction of the entrance is very bracing, and there is a good hotel there which forms a most pleasant retreat in summer time. An interesting excursion can be made by steamer, if time allows, from Punta Arenas to Ultima Esperanza (Last Hope Inlet), where the scenery is magnificent. It was in a cave near this small port that the remains of a Mylodon

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were recently discovered. The remaining few days of our stay in this locality, we spent on the opposite side of the Straits, in Tierra del Fuego, and our experiences there are set forth in the following chapter.

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CHAPTER XVI.

TIERRA DEL FUEGO. PORVENIR. MISSION STORIES. ONAS. YAHGAN AND ALACALOOF INDIANS. RIDE ON THE CAMP. SHEEP FARMING. SALT LAGOON. GOLD DIGGERS. SHOOTING EXPEDITION. A NARROW ESCAPE. SHEEP "DIPPING." "SAKKARAH." PORT FAMINE. MOUNT SARMIENTO. MOUNT BUCKLAND. CAPE FROWARD. CROOKED REACH. SUNSET IN THE STRAITS. CAPE PILLAR.

THE distance from Punta Arenas to Porvenir ('future'), the Chilian capital of Tierra del Fuego, is about twenty miles, and, as a rule, the passage across the Straits is a rough one. We made it, however, very comfortably in the small steamer 'Lovart,' about 500 tons register, which is owned in Punta Arenas, and as the weather was beautifully fine and sunny, the trip was most enjoyable. The entrance to the small river or inlet on which Porvenir abuts is not visible from the sea for a greater distance than half a mile—the land lying very low at this part; but after getting within the prescribed limits, we opened up the 'Rio,' which runs down from the mountains some 20 miles further inland. The steamer, which was a large one for the port, got in at high water, but 'bumped' twice during the process, and, after performing a circuitous route, entered a small bay and came to an anchor off the village. We were certainly surprised to see so large a place, there being about fifty corrugated iron dwellings, and a population of say 200.

We were met on landing by the governor of Tierra del Fuego and the commissary of police, the latter to place himself under the orders of the

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'alcalde,' or chief magistrate of Punta Arenas, who was one of our party. There was an interesting engineer on board the 'Lovart,' who had brought out the mission steamer 'Allan Gardner,' and had been all round the southern islands in her, looking for Indians in order to ascertain their number, and also prospecting for good camp. He told us of some dreadful massacres by the Indians during the last twenty to thirty years, and of one missionary party which

YAHGAN INDIANS.

was sent under sealed orders to land at a certain place and open up a mission, which was entirely annihilated. Some of the Indians who were present, as youngsters, at this massacre still live in the district, and they speak of the affair to this day with bated breath, and aver that, ever since, 'Kushpick' (their god) has been angry with them. They are convinced of this because on the evening of this dreadful deed the sky was blood red. There are not many Indians left now,—not more, we were told, than about 200 in a wild state.

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There are three kinds of Indians, viz., the Onas or foot Indians, the Yahgan or canoe Indians, and the Alacaloofs, also wild, undressed creatures of the very lowest type, and who are found principally in the neighbourhood of Smyth Channel.

The Yahgans are frequently seen in the Straits in their canoes, each canoe apparently conveying a family, as generally the occupants consist of a man with one or two women, and a child or two. There is always a fire alight at the bottom of the canoe, and there are

ALACALOOF INDIANS.

also three or four dogs. The Indians have very little clothing on, occasionally sealskins, sometimes an old blanket, or coat, or vest, which has been thrown to them from a passing vessel. The women propel the canoe with primitive paddles, and the man holds up one or two skins for barter. When approaching a steamer they call out 'galleta,' 'tabac,' the Spanish words for biscuit and tobacco. The excellent illustration facing this page was taken by one of the officers on a Pacific liner.

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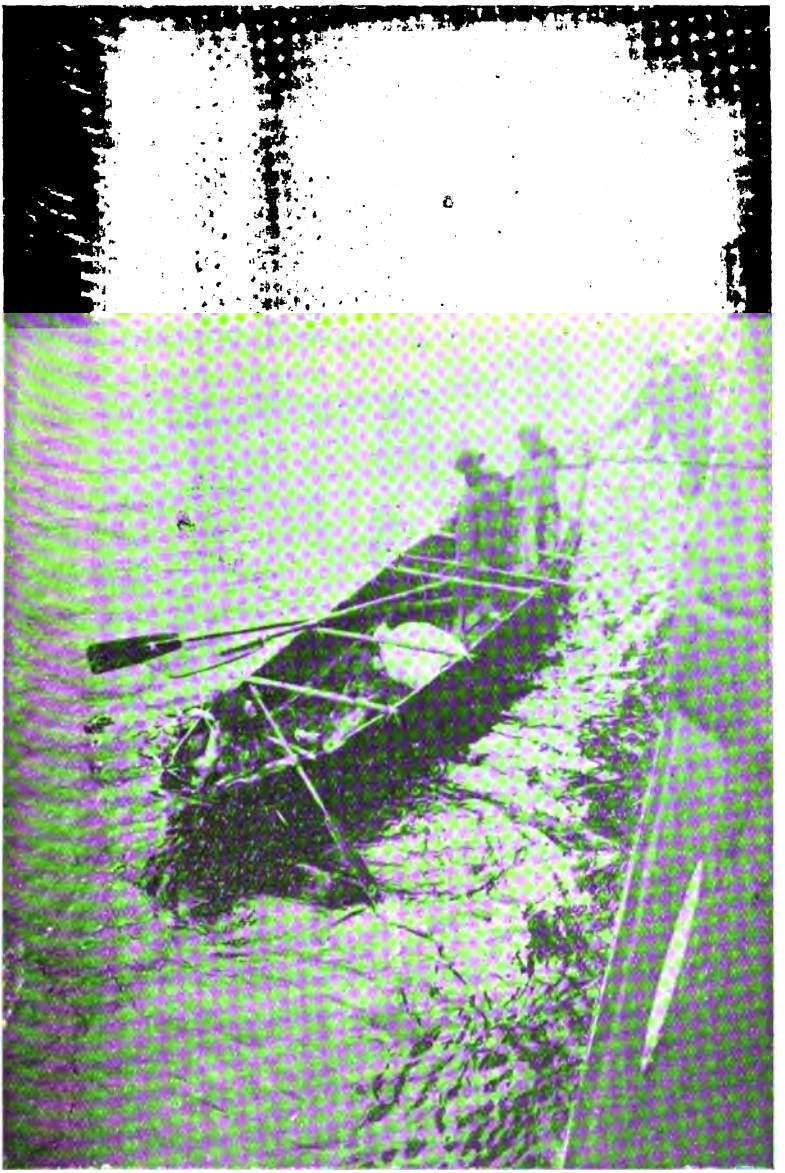

INDIANS COMING ALONGSIDE STEAMER IN MAGELLAN STRAITS.
(Note the bag of biscuits in canoe, and also woman astern.)

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The Fuegians are possibly the lowest type of savage in the world; though since 1830, when Captain R. Fitzroy, of H.M.S. 'Beagle,' brought four of the natives to England, and after partly educating them, restored them to their own country, repeated efforts have been made to civilise them. There is quite a settlement on Dawson Island, conducted by priests of the Roman Catholic Church, and the Indians work as labourers, being taught habits of industry and the value of agriculture. There are also missionary stations conducted under the auspices of the South American Missionary Society, and much good is being done in a quiet way in this out-of-the-world place.

ONA INDIANS.

The 'Foot Indians' are a superior race to the Canoe Indians, being more akin to those of Patagonia. They rarely use canoes, but live on the sports of the chase. A whale is a great boon to them, for they feed on the blubber, and manufacture the bones into spear heads and other hunting weapons, and make fishing lines of plaited sinews. These Indians never stay long in any locality, as they have the idea that if they do so, some

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evil spirit will take possession of them. They, nevertheless, have some system of organisation, and the land owes its name (which signifies 'Fireland') to the numerous fires which were seen by the first navigators of the Straits, and which, undoubtedly, served to warn the various tribes of natives of unusual events, such as the passing of a vessel, in those early days. The Indians have ever proved themselves antagonistic to the approach of civilisation, and the sheep farmer

ONA INDIANS—TIERRA DEL FUEGO.

with whom we stayed for a few days had many trophies as the results of Indian fights. He also bore the marks of arrow-wounds, as the Indians are clever at forming an ambush, and a flight of arrows usually comes when least expected. Several of his servants were captured Onas, and one of them seemed to be developing into a clever sheep farmer. Our host was a sturdy Scotchman, afraid of nothing, and held in great fear by the Indians, who had come to

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the conclusion that it was wisest to leave him and his flocks alone. He was very reticent as to his escapades, and he had had many, especially in the early days, as he was one of the pioneers, who had to rough it. No doubt a good many lives of both Indians and white men were lost in the establishment of large sheep farms and the struggle for the ascendancy.

When we arrived at the farm, we were told that all hands were out in the camp, some eight miles distant, lamb marking, and as we were desirous of seeing this operation, it was necessary to get horses. There were plenty of these animals running about on the hillside, and a boy and an Indian maiden were sent to drive them into the corral. After selecting those we wanted, we caught and saddled them with good old sheepskin saddles of the ancient Spanish type, having large wooden stirrups, which we borrowed from different parts of the town. Then mounting, we made for the brush. The horses were young, fresh, well trained, unshod, and able to negotiate anything. Our way led right up the hillside, which is covered with 'calafat' and other bushes, with here and there a little open country, over which we cantered. Then came some down hill work, then up again, dodging the bushes, and holes made by the field rats, which seem to be very numerous. Then we reached an open stretch of camp, and left our horses with a light rein to do their best, only pulling them up when we came in sight of three other horsemen and a number of dogs coming towards us. These proved to be farm

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shepherds, one an Indian, in search of sheep. Then off we went again, down hill, until we arrived at a small lake, the margin of which we skirted; and, after climbing up a steep hill, we got away again at a gallop across country covered with scrub, and somewhat difficult and dangerous to ride over. Passing the brow of the hill, we came in sight of a large flock of sheep and lambs—some 10,000—fenced in, and a number of men were busily engaged in the several operations of marking. This was our destination, and as the horses sighted some of their fellows tethered to a camp cart, they set up a wild neigh of delight. It was a good omen, and we were received by our host with a 'glad hand.' The camp fire was lighted, and an Irishman was cooking the mid-day repast, and could find time to crack the accustomed joke. There was little time, however, for joking, or for eating and drinking, as the marking of some thousands of lambs by the farmer personally—as he will rarely trust another to do this important operation,—is a stupendous business. Our host was an adept, and as he had an excellent system of keeping the lambs moving towards him, he could get through about 3,000 a day. Naturally, as the sheep and lambs are collected from a large expanse of camp, and there is no fodder available in the confined space fenced in, the work has to be done with skill and speed, and we witnessed both, though the sight of so much blood was not pleasant. The lambs and sheep are forced to run through a narrow passage with a gate opening in two directions, and in this way the lambs are

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separated from their mothers. Then each lamb was lifted up to have a piece of its ear and of its tail cut off. The process looked a painful one, though, no doubt, it is absolutely necessary.

After watching the operation for a time, we decided, as the men were all busy, to remount and ride over to the salt lagoon, some few miles further on, and this we did, seeing plenty of birds—wild geese, swans, ducks, partridges, plovers, hawks, owls, etc., on the way. We mentally determined to try some shooting on the morrow. We rode round the margin of the lake, after negotiating the steep incline leading to it, and we searched for wild goose and flamingoes' eggs, but without success. We got, however, some specimens of the salt which fringed the lagoon. Then came an experience which none of our party, I believe, would care to repeat. The Alcalde, who was leading, and is a partner in this farm, as well as several others in Tierra del Fuego, selected what he believed to be the easiest way to the high ground surrounding the lake. There was a sort of bridle path which ran round the lagoon, but which soon disappeared when we began to ascend. The moment the first horse commenced to climb, the remaining three turned and took the ground right in front of them, and it would have been sheer madness to attempt to stop or turn them. We were already pretty high up, and the remaining 20 to 30 feet seemed almost perpendicular, with a slightly overhanging top. We let the reins fall and lay right along our horses, clinging on to the saddles, and expecting momentarily that the

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horses would slip and roll with us to the bottom of the declivity. Fortunately they had no iron shoes on, and could cling like cats. When it came to the overhang, there was a struggle, a moment of anxious doubt, and then we were all safe, the horses steaming and panting after the keen exertion and excitement. I could hear a fervent 'thank God' from one of the party, coupled with the opinion that the gradient was at least one in two. The way we had come ran up from the lagoon so :—

After allowing the horses a little time for breathing, we cantered off amongst the scrub, and met another mounted shepherd with a number of sheep collies. He was gathering the sheep and lambs together, and driving them to the marking pens. Here and there we came across the half-eaten carcase of a sheep or a lamb which had fallen a victim to one or more of the numerous foxes which prowl round the camp, and which, as they are as large as wolves, are very formidable. The camp, as we made our way back to Porvenir, impressed us favourably, and is no doubt improving by the constant treading down it gets from the large flocks of sheep it now supports.

Darwin could not have found much time to explore the land, otherwise he would have given a better account of it than he has done. There are miles of country suitable for sheep and cattle, and the farmers are doing well. It is, of course, a hard life—exposed to the depredations of hostile Indians and the extreme wintry weather, coupled with the work of looking after, marking, shearing, dipping, and 'trying down" huge

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flocks of sheep numbering 20,000 and more. Then there are other dangers—all kinds of gold diggers go to Tierra del Fuego, some ruffians and some slightly superior, and life is not regarded as of much value. There are a few policemen stationed at Porvenir to keep order, and the miners come there to deposit their gold and take back stores to their haunts in the mountains. A couple of miners driving some twenty mules, which were to carry back the stores, were coming down the

ARAUCANIAN CHIEF AND WIFE.

mountain as we returned to Porvenir from our ride, and we visited the store, which is also the bank, later to get a sight of the gold dust they had brought in, to purchase a nugget or two, and to pick up such general information about the gold diggings as might be offered. We were surprised at the size of some of the nuggets, though naturally, being alluvial gold, the bulk was more of the nature of dust, and, in some cases, some alloy had been used to form the dust into a compact mass. One clean nugget, however, which we had

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weighed, equalled £27, and where that came from, there must be a rich lode. The miners followed the Porvenir River right up to its source in the mountains, and were making a living simply by washing for gold. This is now done with success on the sea shores of Tierra del Fuego, and it would not surprise me if some day, when actual mining is commenced, that a rich harvest of gold will be followed by a rush to the district something like what happened at Klondike.

We were good hands at 'cleaning plate,' as our Irish friend in the camp said we would be, after our ride, and we found the mutton of Tierra del Fuego equal to that of the Falklands. Then rolling ourselves under the guanaco rugs, we were soon asleep, dreaming of vast gold mines with Indian diggers, until we sat bolt upright at the sight of so much wealth. Then falling back again, we imagined we were climbing the side of some steep ravine, and the horses, less sure-footed than before, had slipped at the top, and we were rolling over and over, until contact with the bed, as we fell backwards, finished the catastrophe and we awoke. It was but a momentary interruption, and we were off again, galloping over the country in pursuit of game, or flying from some insidious ambush, until one of our party fell on to the floor, and we rubbed our eyes to find it was morning. After breakfast, a shooting expedition along the river was proposed and agreed to with acclaim. We had two double-barrelled shot guns and a Winchester rifle, and we expected to do great execution. We were soon amongst the game—wild geese, duck and plover—but they were very shy of us,

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and it was most difficult to get within range. We blazed away at a great many, but without success. The outing was, however, very successful in another way. We wandered over some miles of country which, as we took the river course, was most interesting. We had a few shots at some owls, but these birds, like the rest, eluded us, and there seemed to be a sort of conspiracy that as soon as we got within range and were going to shoot, a plover would get up and alarm the others with its note of warning. One of our guns was somewhat of a curiosity. It would occasionally miss fire, and when the second barrel went off, bang would go the first, and if one was new at the trick, it would be rather surprising, as the gun kicked terribly after the double shot. However, the loss of a little skin, if nothing worse happens, forms but a pleasant souvenir, though towards the close of the day we nearly had a serious catastrophe.

After we had had tea at the farm, a couple of ducks flew past the window towards the shore, and our best shot seized the eccentric gun, saying he would redeem the bad fortune of the day. He had not been gone long before we heard some shouting, and, looking out of the window, we could see a policeman gesticulating and rushing towards him. Seizing hold of the gun, this officious limb of the law tried to drag it away, with the result that the second barrel went off between the parties, fortunately without hitting any one. It was a very near thing, and we were all relieved when we found no damage had been done. Meanwhile, of course, we had run out of the farm to

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find the cause of the trouble, and to be of assistance if needed. It seems there is a law in the important city of Porvenir against shooting on the shore, which no one but the policeman knew of, and as our marksman had fired one shot, the policeman jumped on him before he could let off the second barrel. There was a great row as the result, and marching off to the lock-up was freely talked of. Fortunately we had the Alcalde with us, and he sent for the chief of police, with the result that after sundry lengthy negotiations, the blue aggressor, figuratively speaking, was the one who spent the night in the lock-up. We learned some months later that he had been removed from the island, and subsequently shot in a quarrel. After the dispute was settled, we inspected the arrangements for 'dipping' the sheep, which were simple but none the less perfect. The sheep are driven into an enclosed space in batches. At one end of this space is a narrow passage, along which the sheep are forced, and which leads right through the 'pit' containing the dipping fluid. This pit is about six feet deep, and a man is stationed on each side of the run, the one to push the sheep under, and the other to assist them out and keep them progressing towards the raised platform. On this the sheep drain off, and the drainings run back into the pit, so that there is no waste of this valuable fluid. The dipping is a tedious process, but it is very effective in preventing scab, etc.

We rowed off to our steamer that night in the moonlight, and next morning we awoke at Sandy Point.

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Looking at Tierra del Fuego from the Straits, as one proceeds after leaving Sandy Point, the description given of it by Darwin is accurate. He writes:—'The country may be described as mountainous land partly submerged in the sea, so that deep inlets and bays occupy the place where valley should exist. The mountain sides, except on the exposed western coast, are covered from the water's edge upwards by one great forest. The trees reach to an elevation of between 1,000 to 1,500 feet, and are succeeded by a band of peat with minute Alpine plants, and this again is succeeded by the line of perpetual snow. Level land is scarcely to be found. The zoology of Tierra del Fuego is very poor. Of mammalia, besides whales and seals, there are one bat, a kind of mouse, two true mice, two foxes, a sea otter, the guanaco, and a deer. Most of these animals inhabit only the drier eastern part of the country. He does not refer to the field rats, and I do not remember any allusion in his work to the wild fowl which exist in great numbers, and find their homes, like the wild swan, around the salt lagoons of the interior. In Chapter XIV. we have alluded to other Argentine settlements in Tierra del Fuego, and most, if not all, the suitable land for sheep farming has been eagerly taken up.

Sir Martin Conway, in his recent book on 'Aconcagua and Tierra del Fuego,' writes that 'the Fuegian Archipelago continues the main geographical features of the south part of the South American continent. It is only the accident of the depression of the valleys

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below sea level that forms Magellan Strait, and cuts the land mass up into a countless multitude of islands.' This opinion is in accord with that expressed by Darwin. We do not, however, agree with some of the other views expressed by Sir Martin, especially in regard to Smyth Channel, but we shall allude to this later.

We left Sandy Point in the German steamer 'Sakkarah,' (since lost off the Chilian coast), and at a distance to the south of about 25 miles we passed

MOUNT SARMIENTO, FROM ULTIMA ESPERANZA.

Port Famine, at which a colony was established by Sarmiento in 1580. On his return, eight years later, it was discovered that nearly all the colonists had died from starvation,—hence the name of the port. There is a sheep farm now established in it's vicinity which is worked successfully. After passing Port Famine, there is a complete change in the appearance of the Straits. The mountainous district now comes into view, and snowclad ranges are seen on either side, running up to 2,000 feet in height. Proceeding onwards to a point named

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San Isidro, the scenery becomes grand. To the south, some forty miles distant, Mount Sarmiento comes into view, the exploration of which Sir Martin Conway has recently added to his numerous other exploits. Mount Sarmiento and Mount Buckland form the two most conspicuous peaks in the high mass of mountains running along the south side of the Gabriel Channel. The first, situated at the south-east angle of Magdalena Sound, is 7,300 feet high, and rising from a broad base, terminates in two peaked summits about a quarter of a mile asunder. From the northward they appear very much like the crater of a volcano, but when viewed from the westward the two peaks are in line, and the volcanic resemblance ceases. Mount Sarmiento is the most remarkable mountain in the Magellan Straits, but, as it is frequently enveloped in mists, it is difficult to get a good view of it. During a low temperature, however, and particularly with a north-east or south-east wind, when the sky is often cloudless, it is exposed to view, and presents a magnificent appearance. Darwin, in his 'Voyage of H.M.S. 'Beagle,'' writes, regarding it—Mount Sarmiento—as follows :—

'In the morning we were delighted by seeing the 'veil of mist gradually rise from Sarmiento, and 'display it to our view. Its base, for about an 'eighth of its total height, is clothed by dusky 'woods, and above this a field of snow extends to 'the summit. These vast piles of snow, which never 'melt, and seem destined to last as long as the 'world holds together, present a noble and even

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'sublime spectacle. The outline of the mountain 'was admirably clear and defined. Owing to the 'abundance of light reflected from the white and 'glittering surface no shadows were cast on any part, 'and those lines which intersected the sky could 'alone be distinguished; hence the mass stood out 'in the boldest relief. Several glaciers descended in

BALMACEDA GLACIER, 4,600 FEET, ULTIMA ESPERANZA.

'a winding course from the upper great expanse of 'snow to the sea coast; they may be likened to great 'frozen Niagaras, and perhaps these cataracts of 'blue ice are full as beautiful as the moving ones of 'water.'

Mount Buckland, on the west shore of Fitton Harbour, is by estimation about 4,000 feet high. It is a pyramidal block of slate, with a sharp pointed apex covered with perpetual snow. Between these mountains, the summit of the range is occupied by an extensive glacier, the constant dissolution of which feeds innumerable cascades, which, in turn, pour large

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bodies of water down the rocky precipices overhanging the southern shore of Gabriel Channel. Proceeding onwards from San Isidro some thirteen miles, Cape Froward is passed. This cape, in lat. 53·33 S., is the southernmost headland of the continent proper of South America, and can be passed close to by the steamer. It is 1,200 feet high, and above it rises the snow-clad peak of Mount Victoria, 2,900 feet. The course now taken is in a northwesterly direction for some 25 miles, the channel being about four miles wide. It then narrows to about three-quarters of a mile in one part. The mountains on either side are forest-clad up to an elevation of 700 feet, more or less, and are always snow-capped. We now come to Crooked Reach, the entrance to which is formed by a narrow and circuitous channel, and, as the Reach is approached, there appears to be no outlet, and the steamer seems to be locked in on all sides by high mountains. The scenery here is wild and magnificent. After leaving Crooked Reach, the direction taken is comparatively straight for a number of miles along what might practically be called an ocean canal, and the scenery on both sides is of the grandest. The mountain tops stand out in bold serrated forms, and their olive-coloured wooded slopes, and numerous glaciers sparkling in the sunlight, make up a beautiful picture, and one not easily surpassed. As we progressed from east to west, the scenery not only maintained its character, but kept on improving so much that an old American lady on the 'Sakkarah,' having exhausted all her terms of praise, turned round

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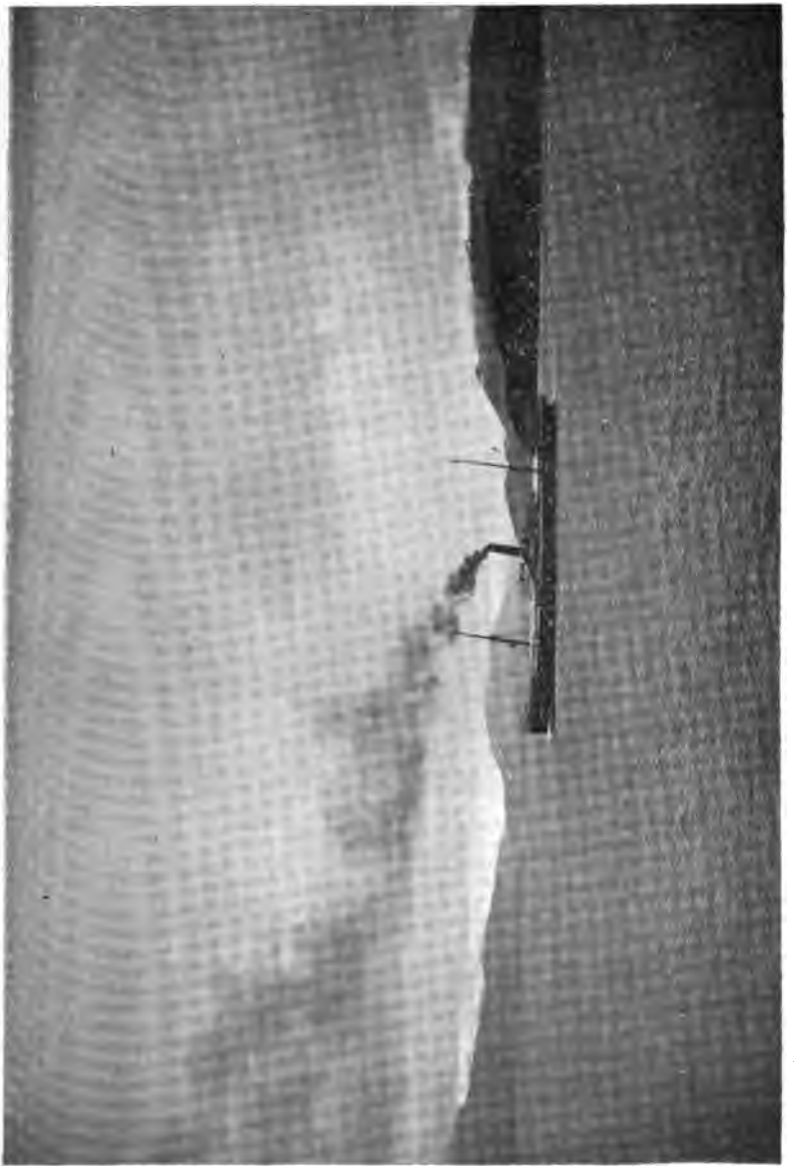

STRAITS OF MAGELLAN.

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to her husband and said, 'John, dear, isn't it cute?' Sir Martin Conway also seems to have been greatly impressed with this part of the Straits. He writes, 'I doubt whether any steamer route, unless it be the Inland Sea of Japan, commands more impressive views than the western arm of Magellan Straits. This is partly due to its width which, while narrow enough to bring the mountains near on either hand, is yet broad enough to enable their summits to be well seen above their shoulders from the waterway.'

At sunset the view we got was magnificent. The snow absorbed the colouring matter from the mountains, and where the setting sunlight struck it, it seemed to envelop the jagged peaks and scoriated sides like a soft mantle of pink, green and gold, with deep purple folds. Far down beneath the crest the night had already overshadowed the forest, and all was sombre save where the cold bluish-green of some distant glacier reflected the dying light.

It was time to go below, as the bell had rung for '*Abendbrod*,' and we took our seats to a chorus of '*Mahlzeits*.' It was quite a German supper, plenty of *Woorst*, *Roh Schinken und Geräucherte Gans*, and my fellow travellers, after the stories they had heard at Rio of the results of eating raw meats, looked somewhat aghast and confined themselves to *Brod und Kasé*.

The steamer now began to feel the motion of the sea, as we got into the sea channel and approached the Pacific Ocean. Had we continued our course, we should have entered the Pacific in about three hours at Cape Pillar. The distance in a straight line from Cape Virgins to Cape Pillar does not exceed 240 miles, but

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the projection of Brunswick Peninsula adds about 70 miles to this distance by water. Cape Pillar, the south point of the western entrance to Magellan Straits, is a high cape shewing from the eastward as a double nipple. The eastern and higher one belongs to a mountain from which the cape springs, but the western one is a kind of tower, and is of a form to which the name 'Pillar' is applicable. The extremity common to the straits and to the Pacific Ocean, is a large detached rock, which shows the disposition of the strata of which it and the cape are formed. That part

SMYTH CHANNEL.

of the cape which is washed by the waters of the straits presents a round hill not very high; while the western part, exposed to the force of the Pacific Ocean, exhibits large excavations made by the sea. The eastern peak is 1395 feet high and the western 1287.

Shortly after *Abendbrod*, as we were to make our entrance into the Pacific, via Smyth Channel, we steamed into that famous strait, and after passing some very lovely scenery, under the worst conditions, we came to an anchor for the night.

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CHAPTER XVII.

SMYTH CHANNEL ROUTE. THE LEHMAN. "COTOPAXI" BUOY. GLACIERS PENGUIN BAY. PORT GRAPPLER. EDEN HARBOUR. PARADISE POINT. ENGLISH NARROWS. TRAVEL RECORDS. MESSIER CHANNEL. GULF OF PEÑAS. MORE YARNS. THE PACIFIC. WEST COAST STEAMER SERVICES.

THE German mariners regard the navigation of Smyth Channel as they would that of a peaceful river, and the strait gives one that impression, though there are in places rapid currents and many hidden dangers to navigation, necessitating unceasing attention to the charts—which, in themselves, are imperfect—and the greatest possible care to make the passage in safety. The track followed, through what is known as Smyth Channel, only includes that portion of it from the Straits of Magellan to Victory Pass, a distance of about 45 miles. The channel really continues for about another 30 miles, and runs into the Pacific Ocean through Nelson Strait. Instead, however, of entering the ocean so far south, the steamer proceeds from Victory Pass round the east coast of Newton Island, through Farquhar Pass into the Sarmiento Channel, and thence into the Innocentes Channel. From this, after steaming via the north of Hanover Island, one can again enter the Pacific by way of Concepcion Strait. We had no such intention, however, but proceeded north via Concepcion Channel, passing the entrance to Trinidad Channel (leading to the Gulf of that name) on our way to Wide Channel.

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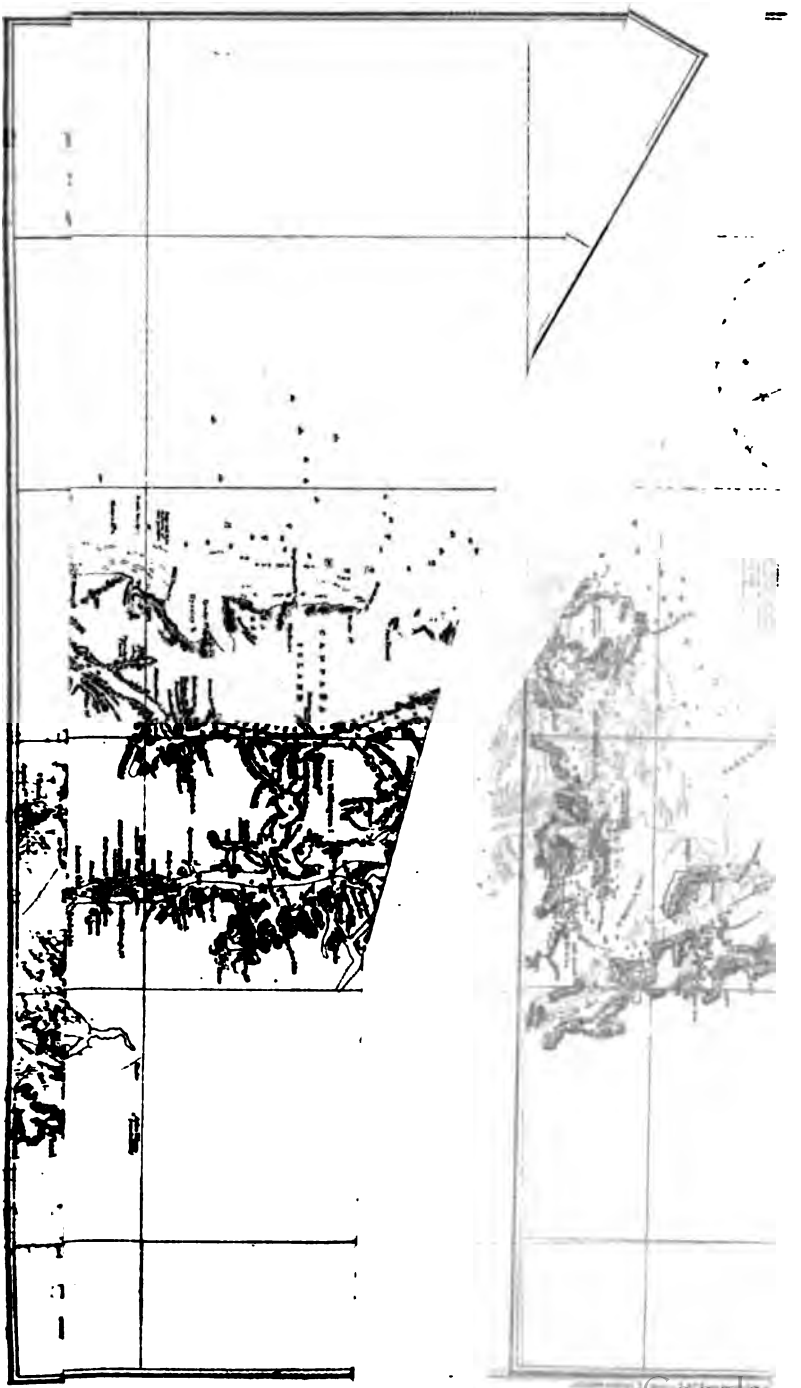

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CHART OF
SMYTH CHANNEL ROUTE

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Steaming through this we came to Icy Reach, then traversing Indian Reach we came upon Eden Harbour, and were soon in the English Narrows, which form

SMYTH CHANNEL.

the most dangerous part of the voyage owing to the rapid currents. Safely through this, South Reach is entered, and from this Messier Channel, which leads us into the Gulf of Peñas, where we make our début into the great Pacific Ocean. The distance from the Straits of Magellan by the route indicated to the Gulf of Peñas is about 300 miles. This is a rapid sketch of what is known, and what we shall speak of as the Smyth Channel route, renowned for its extreme beauty, and rendered doubly interesting by tradition and locality. We had looked upon the snow-capped Rockies in the north; had followed the tortuous course of the Fraser River along its romantic valley; had gazed upon the frowning peaks and giant pinnacles which overshadow it; had crossed the Pacific and Atlantic Divide at an altitude of 8,000 feet, and taken in the almost

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dazzling beauties of the Yellowstone Canyon; and some of our party had made the passage to the North Cape, and in the east had seen 'Nature as she first began with smiles alluring her admirer Man,'—yet here was something different. Here was almost everything we had seen before massed together, and changing in appearance as change the skies in that wild and distant quarter of the globe. We were fortunate in the weather, as we were favoured with most descriptions—sunshine and rain, wind and snow, and, as these changes followed each other in rapid succession, we were able to appreciate the varying effects.

Judging from Sir Martin Conway's description, we gather that as he made the passage of the Smyth Channel from north to south, it does not present the same beauties as from south to north, and undoubtedly he was disappointed in the weather. He says in his recent book 'It must be admitted that the scenery of Smyth Channel is rather monotonous; always fine, no doubt, but always fine in the same way. The views are composed of the same element, a calm water highway, wooded islands and shores, waterfalls and cliffs above, and large ice-rounded and bare summits reaching up into a roof of heavy clouds, the whole enveloped in sombre and solemn gloom. It is all impressive enough when you come freshly to it, but as the hours of each day draw slowly along, it becomes a little wearisome, so that an effort must be made to fix the attention and not lose the charm of change, because the changes that do take place are within a narrow

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compass.' Then, he continues, and here we see the cause of his expression, 'a little wearisome'—'rain seldom ceased to fall for more than a few minutes at a time till night came on, so that no one cared to land on the reeking shore.' No wonder he was somewhat disappointed. The wonder is that he can say so much that is favourable. It is quite clear that Sir Martin is not of eastern origin, as otherwise he would not complain of the monotony caused by the repetition of that which he admits to be fine. If he had seen but one of the many snow-capped mountains which beautify the Smyth Channel, he would, no doubt, have dwelt upon its excellence with his accustomed eloquence, but, because nature here has been prolific, he loses sight of the grandeur which can produce so many magnificent mountains, though, like sisters, they may resemble each other. It is the business method of the west to lump things together, and to miss the eastern pleasure of dwelling upon that which pleases, and allowing the rapture to increase by the repetition of what is sublime until the senses swell with the feeling of infinitude.

He further draws an interesting comparison between the Norwegian inland steamboat route and Smyth Channel, and asserts that the Chilian waterway is, on the whole, less splendid than its northern competitor. It is here that our party would join special issue with him. It is true that the wild solitudes of the south lack the charm and sense of comfort which the sight of a pretty village nestling in some picturesque environment imparts. Man is naturally a gregarious animal, and no doubt Cowper, when he put on the rôle

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of Selkirk, echoed the general sentiment when he wrote the well-known lines :—

> "Oh solitude! where are the charms
> That sages have seen in thy face?" &c.

But we were not to reign there—we were there simply to look upon the solitudes of nature as in their virginity, and in the solemn grandeur of their green and snowy vestments.

Frank Vincent, in his 'Around and about South America' writes:—'The fiords and mountains of southern Chile, I found, excelled in grandeur and beauty those of Norway as much as the latter in turn surpass those of Alaska.'

There is a spice of adventure and danger also attaching to the voyage we are describing, which is not present in the Norway trip, and this adds something to its excitement and pleasure. Should the steamer by chance get into trouble, canoes will soon be seen gliding out from the various inlets and channels, each containing a number of Indians bent certainly upon plunder, if their intentions are no worse. They are adepts at concealing themselves, but really this requires little skill in the tangled woods which skirt the banks on either side of the channel. The German children on our steamer were continually on the watch for the 'Lehman,' as they call the savages, but we saw nothing of them on our trip, not even when we came to an anchor in Grappler port, where it is customary to see them. It appears the name 'Lehman' arose through an accident which happened to a German boat twenty or more years ago. She was on the rocks for some

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months, and, naturally, attracted quite an army of Indians, who daily became more threatening. The engineers of the ship, who were a merry crowd, induced a number of the savages, after the ship was got off the rocks, to go on board, including the 'Cacique' or chief. They then got them down into the engine-room, and opened the furnace doors, to the great terror of the natives, who thought they were going to be roasted. When they had been sufficiently frightened, they were taken up on deck again and the chief was decorated with an old top hat with a band round it, on which the name 'Lehman' was painted with the number '1.' The other Indians had bands put round their necks with circular pieces of bunting attached, the name 'Lehman' being also painted on these flimsy medals, and the whole band was numbered consecutively. The name 'Lehman' in Germany is somewhat equivalent to that of 'Jones' in Wales, and ever since this incident the savage of the Smyth Channel has had at least one link to civilisation. These Indians, for the most part, go about naked, and are dreadful looking people, with their long matted hair. If they possess or are wearing any skins, they will readily dispose of them. Naturally, from their mode of living, they are very dirty, and it is difficult almost to conceive that they belong to the human family. We were, nevertheless, somewhat disappointed at not making the acquaintance of some of them, though we found traces of them, and discovered one of their oblong wattle-work huts when we landed, after coming to an anchor, at Grappler port. It was a very simple erection, and, when occupied, is usually

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covered with guanaco or other skins, and in the centre, besides the remains of a fire, was a large heap of mussel shells, and there was also a number of these shells all round the outside of the hut. The Indians live on the mussels and limpets, plenty of which are found in the channel, and also on berries which they get in the woods. There are wild geese, and possibly other birds and animals inland, though we saw none during our passage except a huge condor, which was flying in the direction of Mount Burney, one of the finest mountains in the Straits. Otter hunting constitutes one of the chief excitements of the Indians in this part, and they are evidently experts, as they usually have otter skins for barter when they accost any of the passing steamers. We saw a splendid sea otter as we were landing, but could do nothing to secure it.

There have been a number of wrecks in the channel, one, strange to say, at the false entrance to Eden harbour, and the masts of the unfortunate steamer are still standing, and serve as a warning to all passers. 'Wrecked at the gates of Paradise' it seemed to say, and the thought was an unpleasant one. We saw also the buoy which marks the spot where the British steamer 'Cotopaxi' sank after striking a submerged rock, and our memories recalled the hardships endured and heroism displayed by the officers, crew and passengers on the occasion As they had to live on mussels and tallow for several days, it was certainly a fortunate circumstance that the mussels were plentiful. There is also a good supply of fresh water and timber for fire.

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We passed numerous islands on our way from the first anchorage in Sholl Bay to the second in Port Grappler, in fact we threaded a perfect labyrinth of them, and the land on either side was high and appeared at the summit to be icebound. Splendid glaciers running right down to the channel were visible

GLACIER BAY.

at intervals, and small icebergs which had broken away from the glaciers came bobbing about our steamer. It was blowing a gale part of the day, but between the high land we were quite protected from its force, and rather welcomed it for the wild sky effects it produced. Some of the islands presented hills of a red colour, and were quite barren except close to the water's edge. At times we who were

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not navigating were at a loss to know in which direction we would proceed, as the channel would present what seemed to be numerous outlets, but which really were only inlets or 'esteros,' the land on both sides of the channel being much indented. Bold, rugged headlands and pinnacles command these passages and give to them a wild and, at times, a gloomy grandeur. A glance at the chart will give some idea of the circuitous nature of the channel, and the points of interest which are being continually opened up as the vessel speeds on her way. There are numerous bays and coves in which good anchorage exists, and mostly all danger points are marked by kelp. In many cases, however, owing to the current, the kelp may not show itself until some considerable distance from the position of danger.

At noon we entered Penguin Bay, and spent a couple of hours in capturing icebergs. There is a splendid glacier at the end of Penguin Bay, which, we understand, is about twenty miles in length, and which supplies the bay with bergs, and the German steam-ships with ice. It was most interesting watching the men (four in a boat with an officer) securing the bergs with lassoes, and then towing them alongside the ship. The bergs would frequently escape, as the rope attachment was not very secure, and even when alongside the steamer, the wire rope, used to hoist the berg on deck, would slip off or cut through the ice, and the berg would fall away. The bergs were simply beautiful in appearance, white and blue (of a delicate shade), and green near the water. They

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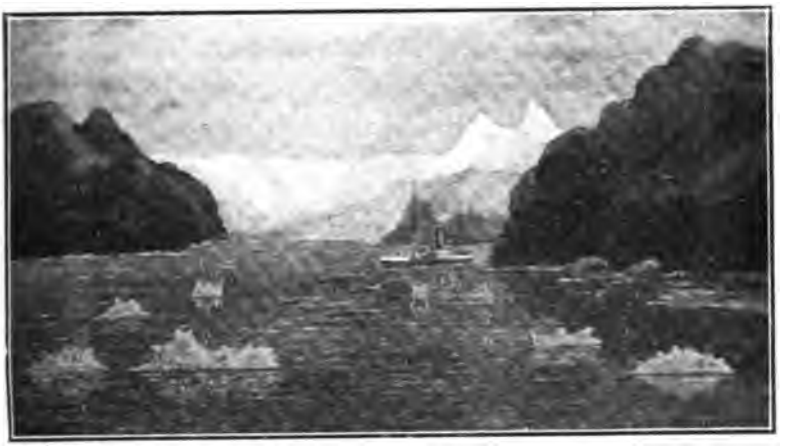
usually showed about a third of their size above the water. After shipping about ten tons, we turned into Icy Channel. Had we come about a month



PENGUIN BAY.

later we should have found this much impeded by the ice which flows down from the glaciers in Eyre Channel. Then we picked our way through the most charming scenery, but difficult navigation, to Port Grappler.

Port Grappler, in Trinidad Channel, we found to be well sheltered, and we anchored inside of Cloué Island just before sunset. There was plenty of deep water, but only just room for a steamer to swing in. We went ashore, as already related, at this port, and made our first attempt to pass through the tangled

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mass of wood and creepers, all dripping from a recent shower. It was almost impenetrable, and it took some considerable time before we could make any headway. We then struck an Indian path, and came upon the hut already referred to. There was a stream rushing down from the rocks above, and some of our party followed this up for a considerable distance, examining its bed in the eager expectation of finding nuggets, but without success. It was difficult to keep together, as each one had to force a passage for himself, and so we eventually all got separated, which was somewhat unpleasant, as we were unarmed and knew of the treacherous habits of the natives. We kept, however, shouting to each other, and made our way downhill to the water, where the ship's boats were waiting for us. On a fine day, and with an armed party, one might do some splendid exploring in this district, and we are trying to put pressure on the Pacific Steam Navigation Company to run a small steamer, with purely pleasure parties, in Smyth Channel, during the summer season, making Punta Arenas the point of departure and return,—say a fortnight or three weeks' trip, with plenty of ammunition and sporting equipment on board. There is no fear that the tourists will turn into natives in that short period. It seems there was a German lady on our ship who had resided in the Brazils, and the story was that the first man she met, on arriving at the German colony near Porto Alegre, was a negro, whom she called in German a 'black-man.' It appears he had picked up some German, and he replied in that language, 'When you, madam, have

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been in this country as long as I have, you will turn black also.' Hearing the German language, she jumped to the conclusion that he was a countryman metamorphosed, and she cried, '*Ach, Gott, schicken Sie mich nach Haus,*' ('Oh, God, send me home'). We heard a great many '*Ach, Gotts*' on board, even from the children, which, to English ears, is unpleasant, but which in German has not the same significance as in English.

We took good care to be up early next morning, as we were to proceed from Port Grappler to the English Narrows and Messier Channel, and we were well and amply rewarded. The weather, though squally, was at times brilliantly fine—bright sunshine, great rolling clouds with more than the proverbial quantity of blue between. Eden Harbour presented the first object of interest, with the wreck of the 'Hermia' near the entrance. At this point the mountains are all fairly high, the tops being snow-clad, as the line of perpetual snow in this district, commences at about 3,000 feet. The water, black as ink, except where the sun strikes the surface, the islands at the entrance covered with vegetation, brown russet and clear olive in its colouring, and then mountain after mountain stretching away in the distance, snow-crowned and sparkling in the sunshine. One bright snow mass stood out in bold relief against the blue sky, others scarcely distinguishable from the clouds which, creeping over the summits, formed to the eye a further chain of mountains reaching up into Eden itself. It was the most beautiful view we had ever seen. It seemed

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not of this earth. We looked out in the clear, frosty air to a soft, dreamy world of enchantment, and felt we had in reality arrived at the gates of Paradise. True enough there is a point of that name a little to the north of Eden Harbour, and, having passed this, we came to the English Narrows, the most difficult and dangerous part of the Strait. The silence here seemed to make itself felt, and scarcely a word was spoken on board, everyone being intent upon watching the manœuvring of the steamer. Just a little want of knowledge or a little hesitation and we should have had trouble. The scenery here is also wild and grand, and as we emerged we could see several boards on land, recording the date when certain vessels had visited the locality. It is a practice when any party lands on any of these islands, to put up a board recording the fact, or to paint the particulars on some prominent rock, and on the island near Port Grappler we counted over twenty such records. In fact a part of the crew of our steamer was told off for the purpose, and they went ashore duly equipped with paints and a board. It seems a pity, therefore, and a departure from his usual good taste, that Sir Martin Conway should go out of his way to refer to one of the boards containing the name 'Colonel J. T. North' as a 'flaming advertisement,' especially as the Colonel has been dead for some time, and the board probably was placed in its position by some one of the many friends who accompanied him on the occasion, or it may be by the ship's crew, as in our case. Of what use would

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a flaming advertisement be in that channel? We must say that all on board our steamer were deeply interested in reading the records, some of which were of very ancient date.

After steaming through the Narrows at slack water, we were not long in running through Messier Channel, and making our début into the great Pacific, which, as if to belie its name, met us with a mountainous sea. On entering the Gulf of Peñas we were followed by a number of large albatrosses and cape pigeons, and some of our German friends produced their guns, with the result that an albatross was shot. As it fell into the water, its fellows pounced upon it, and, in their eagerness to make a meal of it, tore it to pieces.

There is always, more or less, a heavy swell in the Gulf of Peñas, though it is not to be compared with the sea off Cape Pillar, at the western entrance of the Straits of Magellan, a short foretaste of which we got when we entered Sea Reach, before seeking the shelter of the Smyth Channel. Some of the passengers felt the change from the channel to the ocean very keenly, especially as the 'Sakkarah' pitched and rolled considerably, and one lady of a timid nature enquired of the Captain if there was any occasion for fear. He replied 'Yes, madam, plenty for fear but none for danger.' Shortly afterwards we had a fall of snow, and quite a snowball battle amongst the passengers, who were of the free and easy type, as was evidenced later at dinner, when walnut shells replaced the snow.

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Next morning there were some sooty albatrosses, or cape hens as they are called, as well as a large number of cape pigeons and several white albatrosses following the ship without apparently moving a pinion, and some of the passengers were soon fishing astern for the pigeons with thread and white cardboard. There was one passenger, however, who would do nothing but lie around and smoke, and when taken to task for his laziness, he replied that he had been born tired and required a lifetime to rest in. He had, however, he said, exerted himself on his recent visit to Paris, and had been everywhere on the trams except to 'Complet,' and he never could get a seat on one going there. The one thing which struck him most in Paris was that half the city belonged to 'A Louer.' The captain, who came along at this juncture, said he feared we had got into bad company, so he took us for a promenade on the quarter deck, and told us a yarn or two of his early sailing ship days. The sailing skipper had then to act as doctor as well as perform his other duties, and sometimes the small supply of medicine would run short. 'No. 15' was the great specific for all complaints, even abrasures, and there was, consequently, a great run on it, with the result that the stock gave out. The master, however, was a man of resource, and all complaints requiring specific No. 15 were treated during the remainder of the voyage with Nos. 7. and 8 in equal proportions.

We were now on the vast Pacific, the largest of the world's oceans, and around the shores of which, as some one has fitly said, 'are now circling the world

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currents of progress: instinct with thought and energy.' 'Man,' as Samuel Purches says in his 'Pilgrims,' and, when eulogising the sea, 'should at once lose half his inheritance if the art of navigation did not enable him to manage this untamed beast, and with the bridle of the winds and saddle of his shipping to make him serviceable.' Then, after recounting the services of the sea, he concludes:—'The sea yields action to the body, meditation to the mind, the world to the world, all parts thereof to each part, by this art of arts, Navigation.' 'The Pacific,' says Bancroft, in his splendid work on the 'New Pacific,' 'is now one of the world's highways of commerce, not a hazy dream or half mythical tale, with its Ancient Mariner, and Amazonian Queen, and Crusoe Island, and terrestrial Paradise. And, as this ocean is the largest, its borders more extensive and containing more natural wealth, its islands more numerous and more opulent than those of any other sea or section, its ultimate destiny and development will be correspondingly great.'

Who has not in his youth read the stories of the Coral Islands, of the pearl fisheries, of the depredations of buccaneer Morgan, the adventures of Robinson Crusoe, and the conquests of Cortes and Pizarro, and who, having read of the wonderful discoveries of treasure, of the gold of the Incas ('the tear-drops of the sun'), the silver of Chile and Peru, and the wild, desolate, and romantic scenery of the coast line of South America, the El Dorados of the imagination and of real fact, the scenes of carnage and of conquest, has not longed for a sight of this wonderful country, with

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its towering Cordilleras, its torrid, temperate, and frigid zones, and its peaceful ocean.

In Chapter I. we dealt with the steamer lines trading with the east coast of South America, and whilst some of these also serve the west coast, it is well that we should tabulate the west coast services, dealing not only with those which ply on the South American coast, but also those along the western shores of Central and North America and British Columbia, as it is our intention, in Chapter XVIII, to deal with the Pacific problem, now but a small cloud on the horizon, but which, if we mistake not, will, in the near future, envelop the whole of the commercial world :—

FROM EUROPE—

All West Coast European connections, *via* Panama, are given in Chapter I.

Name of Company.	Nationality.	Ports of Departure.	Class of Steamers Employed.
The Pacific Steam Navigation Co.	British.	Liverpool.	Fortnightly mail and passenger service to Valparaiso.
Do.	do.	Liverpool & Glasgow.	Monthly passenger, mail and cargo service to Bahia Blanca, Port Madryn (Argentina), and West Coast of South America.
Do.	do.	do.	Monthly passenger and cargo service as far north as Payta (Peru).
Lamport & Holt	do.	Glasgow & Liverpool.	Monthly cargo boats.
Gulf Line, Ltd.	do.	Glasgow & Liverpool.	do.
Kosmos S.S. Co.	German.	Hamburg.	Passenger and cargo boats, plying as far north as U.S.A., Pacific ports, and occasionally to Vancouver
Roland Linie.	do.	Bremen.	Cargo steamers to Chile and Peru.

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FROM U.S.A.—

Name of Company.	Nationality.	Ports of Departure.	Class of Steamers Employed.
Merchants' Line (W. R. Grace & Co.)	American.	New York.	Cargo boats.
Brown, Beeche & Co.	do.	do.	do.

LOCAL SERVICES ON THE WEST COAST OF SOUTH AMERICA—

Name of Company.	Lines between	Class of Steamers Employed.
The Pacific Steam Navigation Co.	1. Valparaiso, Callao and Panama. 2. Valparaiso, Callao and Eten. 3. Port Montt, Valparaiso and Junin. 4. Valparaiso and Constitucion. 5. Valparaiso, Coquimbo and Peña Blanca. 6. Panama and Guayaquil. 7. Panama and Chiriqui Ports.	Passenger, cargo and cattle steamers.
Cia Sud Americana de Vapores	1. Valparaiso, Callao and Panama. 2. Valparaiso, Callao and Eten. 3. Port Montt, Valparaiso and Junin. 4. Valparaiso and Rio Imperial and Rio Bueno.	do.

BETWEEN PANAMA AND SAN FRANCISCO—

Name of Company.	Nationality.	Ports of Departure.	Class of Steamers Employed.
Pacific Mail Steamship Co.	American.	San Francisco.	Passenger and cargo steamers.

BETWEEN SAN FRANCISCO, VICTORIA, VANCOUVER, AND MEXICAN PORTS—

Pacific Coast Steamship Co.	American.	San Francisco.	Passenger and cargo boats.

A local Mexican Line of passenger and cargo steamers runs between Manzanillo, Mazatlan, and Guaymas.

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CHAPTER XVIII.

CONSERVING TRADE. RECOMMENDATIONS OF SUB-COMMITTEE ON STEAMSHIP SUBSIDIES. AMERICAN IMPERIAL POLICY. U.S.A. COASTING LAW. CONTROL OF PANAMA ROUTE FROM THE NORTH. BRITISH COLUMBIA. CENTRAL AMERICAN REPUBLICS. THE TRADE AND FUTURE OF THE PACIFIC. GREAT BRITAIN'S DUTY.

IT is not without some degree of trepidation that I approach this chapter, possibly the most important in the book, fraught as it may be with issues tending to the conservation and furtherance of British commerce in the vast regions of the Pacific. This trepidation arises firstly from the fear that I may fail to adequately express all I feel, and secondly that such expressions, however full and convincing, may be received with that apathy and indisposition to action which has, until recently, marked the attitude of the British Government. I am glad to notice, as I write, that the recent attempt to control the Atlantic trade on the part of our American cousins has been met by the British Government in a national spirit—the lion has at last been roused—and, if that spirit be maintained, it will foster, preserve, and advance a trade which has resulted only from years of hard work and courageous enterprise. To rest upon our laurels and upon the security afforded by our reputation, is to invite the silent oncoming of our numerous competitors, and when we are rudely awakened, it may be only to find that our trade is slipping from us, and that our position as the foremost commercial nation of the world, already

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jeopardised, is irretrievably lost. It is, therefore, with no small degree of pleasure that I recently read the recommendations made by the Chairman of the Select Committee on Steamship Subsidies (Mr. Evelyn Cecil, M.P.), and which, as they have an important bearing upon what I may subsequently write, I think it well to quote. The whole of the recommendations do not commend themselves to me, and I do not see how they can to any shipowner, but there is, notwithstanding, an immense amount of good underlying most of them :—

1. That no subsidies should be paid apart from services rendered.
2. That in granting a subsidy endeavour should be made to maintain the pre-eminence of British lines of steamships, that final negotiations should be placed in the hands of one public department instead of being controlled by several departments, and that a permanent committee, consisting of representatives of the Admiralty, the Board of Trade, the Colonial Office, and the Post Office, should be appointed to watch the development of foreign competition.
3. That speed should be made a condition in every contract for payment of the subsidy, whereby rapid communication between the Empire, and fast carriers of food supplies and despatch vessels available for the Admiralty in time of war, might be provided for.
4. That no vessel enjoying a subsidy shall be sold in whole or part to foreign owners without the

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permission of His Majesty's Government on pain of forfeiture of the subsidy or a heavy fine, and it is further recommended that a majority of the boards of directors of subsidised companies shall be British subjects.

5. That the master and officers, with a proportion of the crew of subsidised vessels, should be British subjects.
6. That the Government should have general control of the freights and fares charged by subsidised lines as a means of ensuring reasonable rates.
7. That the Board of Trade regulations shall be enforced against foreign ships as they are enforced against British ships in British ports.
8. That the light dues which are now paid by British ships should be abolished.
9. That the question of excluding foreign ships from the coasting trade of the British Empire should be considered, with a view of exacting a fine or license from such foreign ships, based upon any subsidy which such ships may enjoy from their own government.
10. That, notwithstanding what was said in the first paragraph, special occasions might arise where subsidies would be desirable for establishing fast British communications, and that such a subsidy for East Africa is at times desirable.

We hinted at the manifest unfairness of the light dues impost in our opening chapter, and their abolition

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will be simply an act of justice long delayed. It is perhaps too much to hope that any of the money collected under this head will be restored, but, in any event, let us cherish the feeling that the future charges and restrictions on British shipping, whatever they may be, will be framed in the remembrance of what the trade has suffered in the past.

Too much stress is laid upon the matter of speed, as this may very easily be forced to such an extent that plus the subsidy which a most generous government may grant, the steamers will not be able to pay their way. What is chiefly wanted is regularity and frequency of service, and such help as will enable freights to be fixed at a figure that will attract trade, and freights and fares should not in any wise be controlled except by natural competition.

The proposed coasting law to preclude foreign tonnage from carrying British cargo from one port to another we cannot on general principles concur in, but we certainly think that foreign vessels should not be allowed to use any British port without being subject to the same restrictions, charges and conditions as steamers flying the national flag. What is wanted is the element of fair competition on equal lines, and on these alone can shippers, consignees and the general public at large in any country expect to reap an advantage.

We have already referred in a previous chapter to the folly to our mind of an exclusive coasting law, known in Spanish South America as the 'cabotaje' law. It is the outcome of that policy which seeks to

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create monopolies, and monopolies are naturally and inherently opposed to the welfare of the general public. The United States of North America has been first and foremost in this policy, and has carried it out to an extent which the framers of the law could scarcely have contemplated. We are now alluding to the Pacific. What is the effect of the law there: in what respects does it hamper and injure British shipping, and where is the remedy to be found? No doubt the United States Republic might build a wall around its borders with impunity, as everything needful for the support and comfort of human life could be produced within it. But no enlightened country, with the examples set by other nations before it, could adopt such an exclusive policy. Something more than food and clothing is needed, and there are the aspirations and ambitions of an aspiring and ambitious nation to satisfy. America has now its imperial policy, and is eager for territorial aggrandisement. Its hand stretches far across the Pacific to the Philippines, and its heart is filled and swelling with the desire to dominate the Pacific trade. It seeks also for maritime supremacy, but, to use one of its vulgarisms, it sometimes 'bites off more than it can chew,' and if we mistake not, some of its recent ventures in the shipping line will more than tax its powers of mastication. But before entering upon the broad question of the Pacific, we must look briefly at the effect of the coasting law. American passengers and cargo, for instance, going from San Francisco or other United States Pacific port, say to New York, via Panama, can only proceed or be

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forwarded on a through ticket and through bill of lading if American steamers are used. A passenger might evade the law by taking out a ticket to Panama only—Panama being in Colombia, a foreign State—but cargo, although it be carried through a foreign State, if its ultimate destination be a United States port, can only be conveyed in American vessels, and must pay the regular freight in consequence of this arbitrary law, although a foreigner would carry in most cases for less. If, for any reason, the Isthmus route should be closed except on prohibitive terms to American traffic, as was recently the case consequent upon a dispute between the owners of the Panama Railroad and the American steamers on the Pacific plying between San Francisco and Panama, the traffic, unless it can be carried to New York via the Straits of Magellan, is forced to go by rail, and to pay the ruling rates. If the traffic cannot stand all these expenses, it must find some other outlet or stagnate, whilst the Atlantic coast may fill its requirements from some other internal or foreign source. This system naturally tends to high prices, and if the cities can be taken as a criterion, my experience of North America is that a dollar only goes as far there as a shilling does in England. I am not now in any way attacking the American citizen, who is about as smart a man as one can find anywhere, and indeed if one wants to get the better of him, very early rising would be needed. It is the coasting law that I attack, and which, for a great nation, seems to me to be puerile in the extreme, though none the less full of virility. In consequence of this

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law, and the control which the American flag has now got of the Panama route, no British or other foreign steamer can pass goods on a through bill of lading via that route from any port north of Panama—not only United States port, but from any port of the several Central American Republics or from Canada. British steamships plying to the north of Panama, and utilising the Isthmus route until recently, are now entirely shut out of the trade, and no matter what the expenditure for tonnage may have been, a fresh trade must be found for the tonnage sacrificed.

Take again the trade of British Columbia. The country is still in its youth, but it has vast resources requiring development, and which, to assist that development, demand fresh markets. The prospects of Canada are such that there has during the last twelve months been an exodus from the United States of at least 30,000 people who have made for the Pacific side of British Columbia, and American financiers have sought to secure the control of the Canadian railways. The United States, being, as it were, sandwiched in between other dominions, damages these other nationalities by restrictive laws. No steamer running to a Canadian port, for instance, and passing along the United States coastline, can carry either passengers or cargo as between two U.S. ports, with the result that the number of steamers which can profitably be employed on the Pacific is very much limited, and in fact is controlled—with the one exception of the German line running from Hamburg to Vancouver occasionally—by United States tonnage. The further

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result of this is that Canada, so far as the coast service to the south is concerned, cannot possibly develop by leaps and bounds as it should do, but is tied to and even has to subsidise an American line. Then, take the Republics of Mexico, Guatemala, Salvador, Honduras, Nicaragua, and Costa Rica. For years these Republics were openly complaining of the American steam ship monopoly of their Pacific coast line, and at their urgent and general solicitation the great British South American Steam Ship Company—or under its proper title, the Pacific Steam Navigation Company, and their Chilian partner—extended their coasting services and ran from Valparaiso to San Francisco, being encouraged also to do this by the Isthmus Railroad Company declaring in its printed reports for the open door policy. As already named, however, the railroad under American management and the American Steam Ship Company got together, and, having settled their differences, created a monopoly, with the result that the British and Chilian companies had no option but to retire from the trade north of the Isthmus, there being no other route for the traffic excepting via the Straits or Canada, which routes were, under the circumstances, impracticable. The further effect is that all traffic between the western shores of South and those of Central and North America has, unless it is taken by the occasional German boats, to be subjected to transhipment expenses at Panama, in addition to the deterioration which not infrequently results from the extra handling of the packages. Mr. Colquhoun, in his book, 'The Mastery

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of the Pacific,' after pointing out that in his opinion the Pacific Ocean may be regarded as the new theatre in which the world's drama is to centre; and alluding to the United States and British Columbia as the States which will play a leading part in that drama, makes the following remarks:—'Owing to physical and political conditions, the rest of the American States with Pacific coasts may be regarded as a *quantité négligéable*, but there remains one important point, the proposed cutting of that thin neck of land which unites the Americas.' We shall in a later chapter touch upon the question of the Panama Canal, and we will, therefore, now confine ourselves to that of the trade on the Pacific as between the north and south Republics and the Dominion of Canada. No doubt Colquhoun had more than the supremacy of trade in his mind, for after referring to British possessions in the Pacific, viz., the Australasian colonies, the Straits Settlements, Hong Kong, British North Borneo, and Canada, he alludes to the future of China as a momentous question, and one of great importance in the mastery of the Pacific, and then proceeds to say:—'On the Pacific slope of Canada, Britain has everything necessary for the creation of a fresh base for sea power, and among the many duties that devolve upon the empire of Britain at this critical point in her career, none seems to the writer more important than the utilisation and development of that magnificent white man's country Canada, and more especially British Columbia.' There is ample evidence in the United States press reports of the imperial policy which

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is steadily growing up there, and its prominent writers are doing all they can to turn public opinion in that direction. Bancroft points out that nearly one-half of the human race lives in countries bordering on the Pacific Ocean, and that the number will soon be more than one-half. 'One-half,' he adds, 'of the inhabitants of the earth within quick and easy reach from the western shore.' After pointing out that there will be an Oriental demand for American mining machinery, electrical inventions and appliances, steel rails, agricultural implements, meats and fruits—dried, canned, or in refrigerators—also live stock and sheep, all raw material for the manufacture of paper and textile fabrics, he makes this trite remark—'*and as with Asia so with South America.*' In connection with the anticipated development, so far as the east is concerned, we give the following table of the principal lines now plying on the Pacific, between the west and the east:—

Name of Company.	Port.	Steamers.	Destination.
Canadian Pacific Navigation Co.	Vancouver.	Mail and passenger boats.	Japan and China.
Northern Pacific S.S. Co.	Victoria.	Cargo boats.	do.
Canadian and Australian Line.	Vancouver.	Passenger and cargo boats.	Australia.
China Mutual S.S. Co.	Seattle.	do.	Japan and China.
Nippon Yusen Kaisha.	Seattle.	do.	do.
Northern Pacific S.S. Co.	Tacoma.	Cargo boats.	do.
Northern Pacific Railway and Oregon R.R. and Nav. Co.	Portland.	do.	do.

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Name of Company.	Port.	Steamers.	Destination.
Pacific Mail S.S. Co.	San Francisco.	Mail and passenger boats.	Japan and China.
Occidental and Oriental S.S. Co.	do.	do.	do.
Toyo Kisen Kaisha.	do.	do.	do.
American and Australian Line.	do.	do.	Australia and New Zealand.
California and Oriental S.S. Co.	San Diego.	do.	Japan and China.

There is no regular service south of San Francisco and San Diego to the east, but colliers from Australia regularly bring coal to South America, subsequently loading nitrate to Europe from Chilian ports, or grain from the U.S.A.

'To take rank,' says Bancroft, 'as a first-class commercial power, the United States wants shipping, and to stop paying $150,000,000 for transportation every year.' It is clear from this, and recent shipping combines, that the Americans do not want their mails and goods carried in foreign bottoms, and that they intend to make a great bid for the trade in the Pacific both to the east and along the shores of all the Americas.

European trade has almost reached its zenith. It is scarcely capable of more development. There are more boats in the Atlantic trade now than can well find a living, and a new world has got to be opened up and new trade found and created if progression and not decline is to be the order of the day. The largest ocean should have a destiny and development correspondingly great.

We have seen that Canada subsidises an American

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line in a small way to carry its mails and cargo from British Columbia to the United States ports, and that the eyes of the Americans are trending in the direction of the control of the western Pacific coast, and we are convinced that if the trade is not to pass away from British hands altogether, the Dominion Government and the mother country must awaken to a sense of the growing importance of the trade, and what the future foreshadows. Having done this, it will see the necessity and advantage of largely subsidising a line under the British flag, not only for the eastern trade, but for the coasting trade, from Vancouver or even further north to the southernmost Chilian port, opening up a through connection via the Straits of Magellan between the west and east coasts of America, and between the western coast of Canada and Europe. Without a substantial subsidy for from five to ten years no British line can hold its own, unless some material change were made in the United States coasting law, which is not probable; but, with this, a substantial business between Canada and Central and South America might be created.

There is room for a large business, and such can, undoubtedly, be obtained if reciprocal arrangements can be made with Mexico and other Central and South American Republics, and also if similar tactics to those adopted by other nationalities are pursued, not the least important of which is the transaction of business in the native language of the country. Some of the Republics, particularly Mexico, are making great strides, and we firmly believe that, working in con-

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junction with the Canadian Government and the Canadian railways, a British steamship company would build up gradually an important and valuable export trade in lumber, manufactured timber—such as window frames, ladders, shutters, furniture—coal, canned butter, fruits, jellies, meats, extracts of meats, preparations for soups, cheese, beans, condensed milk, salt, dried and pickled fish, pork, flour, oatmeal, oats, wheat, barley, biscuits, beer and ale, boots and shoes, paper, carriages and wagons—including farm wagons—soap, sewing machines, whisky, shovels, picks, spades, axes, hoes, forks, etc., milling and woodworking machinery, bricks, sewer pipes and clay working machinery, musical instruments, etc. And Canada could import from the south:—Coffee, cocoa, ivory nuts (vegetable ivory), nitrate, cacao, oranges, rubber, dyewoods, mahogany, cabinet woods, onyx, marble, fibres, iodine, quicksilver, medicinal productions, Peruvian bark, sarsaparilla, straw hats, cotton, wool, cochineal, hides, fruit (bananas). All this business could be done direct to and from Canada, instead of via other countries with a system of dual or triple handling, and the volume of trade should, as the result, be greatly increased. The mails from Canada, which have now to be sent to Central and South America, via Great Britain, would also go direct under the system we advocate.

The revenues of the Dominion of Canada are in a flourishing condition, and there is a gradual all-round improvement, so that a subsidy for the securing of a footing in the Pacific Coast trade from north to south

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would not be felt to any great extent, and indeed, as the question is one of national importance, the mother country should come forward with substantial help. It has an enormous surplus revenue from its postal business, and could well afford to utilise some of this money for the fostering of British services which are conducted in out-of-the-way parts of the world under great risks and at great expense. Trade, no doubt, follows the flag, but it also follows the price list, and, as the price list is based upon a summary of all charges, including freights, anything the British Government or the Dominion Government can do in the direction of enabling the shipowner to carry cheaply, will be tantamount to the fostering and advancing of British trade.

A special Trade Commissioner (Mr. E. E. Sheppard) was, a few years ago, sent by the Dominion Government to visit the Southern Republics, and in his report he says—'Mexico imports largely of articles to diversify the diet of her better classes and afford the cheapest possible change of diet for the poor, yet fish from Canada is an almost unknown item. Brazil, on the other hand, which seems to me to have gone far beyond reason in the employing of her available labour to raise coffee, imports nearly all her food supply, and amongst other items of our exports can be found in 1896, $552,084 worth of fish Brazil took directly from Canada, an amount which shrank in 1897 to $359,216. Uruguay and Argentina, both large fish-consuming countries, the seaports of which only are supplied with fresh fish, take nothing of this sort directly from

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Canada, though Uruguay, in 1896, took $50,000 worth of cod fish from Germany alone—probably of the Norway catch. Argentina, with a population of over 4,000,000, appears in the Canadian statistics of 1896, as taking $5,000 worth of fish, but in 1897 Canada appears to have sold her no fish at all.' There is a considerable consumption in all the South American Republics of 'bacalao,' or dried fish, principally cod and ling, 'a large quantity of which comes from Germany, which is not a fish country, and this trade ought to be secured to Canada. Mr. Sheppard concludes his report by stating—'If we are to extend our foreign commerce, in my opinion, the extension of trade should begin with finding the best possible markets, and using the greatest possible influence to obtain low tariffs for those products which we can produce in quantity, quality, and variety, better than any other country.' This opinion we have no hesitation in endorsing, and it must be remembered that nearly the whole of the Pacific coast of South America from Callao to Valparaiso, imports everything the people consume. Green stuffs, and vegetables of all kinds are brought by the ships, the main deck of which is a huge market, upon which are offered for sale potatoes, cattle, sheep, hogs, fruit, and everything consumed by the people of the locality. The country bordering on the sea, and often for a distance of sixty miles into the interior, is barren and productless, and even water has to be conveyed for sale along the coast. The mining industries, however, flourish, and these require constant supplies. In Peru, Bolivia, Ecuador,

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Colombia, and Central America the question of transporting food supplies into the more remote sections is a very serious one, and a large business in canned goods might be opened up in these countries.

VIEW OF STEAMER'S MARKET.

We have written, we think, sufficient to show that if the British nation wish to continue in the trade of the Pacific, and extend along the coasts of Central and North America, it can only do so with the substantial help of the British and Dominion Governments. If that aid be accorded, then British trade being established, will develop with the growth of the countries on the Pacific, and will be ready, when that future already foreshadowed dawns, to assume the position of dominant factor which we as Britishers naturally desire.

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Let us ever bear in mind that one-half of the total foreign trade of Great Britain is with tropical countries.

In concluding this chapter, let me quote the prophetic words, uttered in 1852, by W. A. Seward. 'Henceforth European commerce, European politics, European thought, and European activity, although actually gaining force, and European connections though actually becoming more intimate, will nevertheless relatively sink in importance, while the Pacific Ocean, its shores, its islands, and the vast regions beyond will become the chief theatre of events in the world's great hereafter.'

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RUINS OF A CHURCH NEAR CORRAL.

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CHAPTER XIX.

CORRAL. CHILE. PRODUCTS. MANUFACTURES. POPULATION. CLIMATE. SEASONS. HEALTH RESORTS. CORDILLERA. BRITISH ENTERPRISE ON THE PACIFIC. THE PACIFIC STEAM NAVIGATION COMPANY. SPANISH CONQUEST. CURRENCY. MAJOR AND MINOR PORTS. IMPORTS AND EXPORTS.

AFTER passing out of the Gulf of Peñas, the steamer made for the Chilian port of Corral, where we disembarked. Corral is extremely pretty, situated in a beautiful harbour, and is a popular summer seaside resort, *i.e.*, in December, January, and

CORRAL.

February. There are the ruins of a couple of old Spanish castles facing the anchorage, which we learned

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were built some three hundred years ago. These are extremely interesting, as shewing the thorough fashion in which the old Spaniards protected themselves, and there were some specimens of ancient cannon which had long since ceased to speak, else they might have told us many a tale of siege in the adventurous days of the Spanish invasion—not conquest, as Chile really never was conquered. There are two hotels (kept by Germans), and about 900 inhabitants in Corral, and it is the port for Valdivia (twelve miles up the river of that name), as only light draughted vessels can proceed beyond Corral, the river being shallow. A number of picturesque wooden houses of the Spanish type exist in Corral, and the whole neighbourhood is an ideal one for a holiday, given good weather. There are splendid hills all around, the Isla del Rei opposite, and innumerable inlets and bays to explore, with virgin forest running down to the water's edge. Sir Martin Conway tried to explore some of this forest, and his description of the difficulties encountered is well worth reading. In the bay we caught sight of a family of seals—about a dozen in all—of the kind whose skins, when inflated, are used for making 'balsas,' or rafts, for cargo loading purposes at surf ports, of which there are many along the Chilian coast.

There is a lighthouse known as the Niebla, with a powerful light, situated on the eastern side of the entrance to Corral, which, in fine weather, can be distinguished at a distance of 14 miles. The anchorage is to the south-west of the lighthouse, and

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has a depth of from four to seven fathoms. It is high tide at Corral at each change of the moon (full and change) at 10·35. Ordinary tides rise and fall three feet, and high tides with spring tides from five to seven feet. There is a small mole at Corral, but it is only useful for passengers, luggage, &c., the cargo being carried by flat-bottomed launches to and from the sandy beach, chiefly at Corral Viejo (old). Corral has little trade of its own, in fact no foreign trade ; but a small quantity of flour is shipped, and the fishermen send about 1,000 sacks of 'chorros' (mussels) per month to the north ports of Chile. There are two buoys in the port, one belonging to The Pacific Steam Navigation Company, and the other to the German Steam Ship Company. There are no lighthouse or port dues excepting so-called dock dues of 10 cents per registered ton, which each vessel pays once a-year, if same have not already been disbursed at another Chilian port.

We are now fairly on Chilian soil, and before dealing with any more Chilian ports, we had better rest awhile at Corral, and note down some of the points concerning the great South American Republic of Chile, whose people, on account of their hardihood, indomitable courage, and business enterprise have been named the 'English of South America.' The title is as complimentary to us as to them, and as they have ever been broad in their ideas, and continue to be actuated by a spirit of enterprise, the future should witness some rapid progress. In this, as in other Republics, the dearth of population is felt, and,

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therefore, immigration is badly needed. Immigrants, however, require proper provision to be made for them at the outset, and for a year or two afterwards, and until this is done on a well-organised basis there will not be any rush of people to Chile, although there is plenty of land still available, and the Chilian farmers, as a class, are amongst the wealthiest of the world, living, as one writer puts it, 'like feudal barons, with hacienda in lieu of castle, with broad acreage and thousands of sheep, cattle, and horses.'

According to the official description, the Republic of Chile is situated on the west coast of South America, and stretches from the Rio Sama (about 18° S. lat.) to the island of Pedro Ramirez (about 56° S. lat.), south of Cape Horn, the southernmost point of South America. It has a width varying from 40 to 160 miles, and a length of 2,800 miles. The total area is about 260,000 square miles. Its coast-line is about 2,500 miles. Chile is fifteen times longer than it is wide, and it has been compared to a large serpent, lying between the Cordillera and the Pacific. This mileage includes the Peruvian provinces of Tacna and Tarapacá, and the Bolivian province of Antofagasta: whether occupied by right of conquest or otherwise, it is not our business to enquire into.

Something like a dozen books and pamphlets have been published respecting Chile, and I do not, therefore, propose to deal with the country to any great extent, in a general sense, but to treat more of its trade and ports, about which very little has, up to the present, been written. Chile, as if by common consent, has been

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divided into three zones—North, Central and South, though a recent writer adds a fourth, which he calls 'the forests and fishing grounds.' The northern zone embraces the waterless provinces of Tarapaca and Antofagasta, and may be termed the mining region, there being many rich fields of nitrate (embracing iodine) and borax, and mines of gold, silver, copper, iron, tin, manganese, sulphur and salt. The central is the agricultural region, and includes in its area excellent land for the cultivation of the vine and the growing of wheat, oats, barley, flax, potatoes—in fact, all sorts of cereals, vegetables and fruits which can be produced in Europe. There are also silver and copper mines in this zone in the mountain district, so that it can fairly be termed a mixed agricultural and mineral zone. This zone comprises the provinces from Coquimbo to Valdivia, and includes those of Concepcion and Arauco, the coal production of which we dealt with in Chapter IV. In the cultivation of the vine, quite a number of French people are engaged, but whether it is that the grape has a peculiar flavour, or that the people employed in preparing the wines have not yet got sufficient experience we cannot say, the wine—at all events in the Talca district—does not yet come up to the French standard, though it compares favourably with Australian and Californian. It is wholesome and sound, but there is a certain earthy flavour about it, and the bouquet is capable of improvement. The natives are fond of the wine, being accustomed to the flavour, and there is a large and growing consumption. The southern zone, *i.e.*, south

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of Valdivia, comprehends several provinces which contain vast tracts of land suitable for agricultural purposes, though it must not be forgotten that this zone is a rather wet one, making it somewhat unsuitable for grain. Stock raising is an important resource, and there are large quantities of timber. The sea in the south swarms with fish, and, undoubtedly, if steam trawling were introduced, with suitable curing establishments, a very good business would result, as the consumption of fish is large.

Chile is making progress in its manufactories. There are now smelting works for copper and silver, tanneries, corn and saw mills, boot and shoe, soap, starch, rope, cloth, basket, biscuit, cheese, furniture, candle and paper factories, potteries, breweries and distilleries. Agriculture and mining, however, are the chief occupations. Notwithstanding her productions, Chile imports annually about £10,000,000 worth of textiles, groceries, machinery and lumber. Her exports of minerals, etc., including nitrate, amount to about £12,000,000 per annum. Cattle for Chile are driven over the Andes from the Argentine Republic, and raw sugar is imported principally from Peru. Great Britain supplies about 40 per cent. of the general imports; such as machinery, textiles—say shirtings, drills, prints, etc.—woollen and cotton goods, thread, railway material, tin plates, linseed oil, agricultural implements, ships' stores, etc.

The Incas included in their empire the northern and central zones of Chile, and the inhabitants, for nearly a century prior to the arrival of the Spaniards,

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had the benefit of the privileges which attached to that enlightened dynasty. The name Chili, or Chile as it is indifferently spelt, A. H. Kearne points out in his 'Central and South America,' has, by a curious coincidence, in Quichuan the same meaning as the English word 'chilly.' Its rivers are unimportant, and not navigable to any great extent, but its mountains are superb, and supply one of the two chief sources of the country's wealth, *i.e.*, vast quantities of metals. The other is, of course, nitrate, which we shall treat of later. The famous Cordilleras, which form its border on the east, and have a general elevation of from 5,000 to 10,000 feet, run up in many places to 20,000 feet until they reach their crowning height in the famous Aconcagua, the scene of recent explorations by Sir Martin Conway. He fixes the height at 23,100 feet, and his ascent was made in an amazingly short time. The feat has since been performed by Mr. R. Rankin, but with some permanent injury to himself. Sir Martin's account is worth reading, and it raises to my mind a point as to whether the rarity of the atmosphere in the south is more bearable at heights over 10,000 feet than in the tropical zones. Certainly, Sir Martin's party suffered less from 'Siroche' or 'Puna' (mountain sickness) than any I have heard of, or been with, to heights approaching 14,000 feet in Peru.

The climate of Chile is genial and healthy. North of lat. 27° it seldom rains, and a lady living there, who travelled on the same ship with us to Guayaquil, was as delighted as a child would be at the sight of its first snow when, on entering the Guayaquil

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River, we were deluged by a thunder shower. She had not seen rain for ten years, and she simply played in it, and enjoyed a thorough wetting. It reminded one of the delight of the British sailor at the sight of the grey skies of the English Channel after sailing for months beneath the unclouded and much belauded cerulean blue. South of lat. 27°, the winter months—June, July, and August—comprise the rainy season. During these months the wind blows from the north, whilst for the remainder of the year it blows from the south. Maury, in his 'Physical Geography of the Sea,' points out that 'in Valparaiso the phenomenon of the sea breeze is finely developed. Valparaiso is situated near the southern border of the calm belt of Capricorn when it is at its farthest southern reach which happens in our late winter and early spring, the southern summer and autumn. This is the dry season, when the sky is singularly clear and bright. The atmosphere, being nearly in a state of equilibrium, is then ready to obey even the most feeble impulse to hasten towards the place of any, the slightest, rarefac-faction. At about 10 in the morning, at this season of the year the land begins to feel the sun, and there is a movement in the air. By 3 or 4 p.m. the sea breeze comes rushing in from the southward and westward, and strikes the shipping in the harbour with the force of a gale. By 6 p.m., however, the wind has spent its fury, and there is a perfect calm.'

There is a phenomenon of this kind also on the coast of Peru, but we shall refer to it later. Spring opens with September, summer with December, and

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autumn with March. In the north and centre the average temperature of summer is about 68° Fahr., and that of winter 46° Fahr.

There are many and famous health resorts, possessed of thermal springs, in Chile, such as San José de Maipo and Los Andes, for affections of the chest, Colina for rheumatism, Chillan for skin diseases, and Panimavida for stomachic disorders.

The Cordilleras on the east and the sea on the west give to Chile a natural defensive and trade advantage, and these, coupled with the courage of its inhabitants, make Chile one of the foremost nations of South America. Chile has a regular army of, say, 5,600 men and officers, and a navy of twelve large and ten small ships of war for its defence; and its products are readily transported to the coast for shipment to the markets of the world. To British enterprise, however, Chile owes a great deal, and her development to a very great extent dates from the advent of the steamers of The Pacific Steam Navigation Company on her coast.

The question of establishing steam navigation along the shores of the Pacific Ocean, in connection with the passage of the Isthmus of Panama to the Atlantic, had long excited much interest, and at last a Mr. William Wheelwright brought forward a project with that object. Mr. Wheelwright had obtained decrees from the Governments of Chile, Bolivia, and Peru securing to him and his assigns the

WILLIAM WHEELWRIGHT.

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exclusive navigation of the coasts by steam, with all necessary immunities and privileges (including an exemption from port dues) for the period of ten years. It was only with great difficulty, however, that he succeeded in floating his company in England, and his success was due to the great interest taken by the late Lord Abinger, and the members of the Scarlett family, in the scheme. The British Government then, actuated by a sense of the benefits which would be conferred by an undertaking of the kind upon British commerce, consented to grant to The Pacific Steam Navigation Company (then, in 1838, in process of formation) a royal charter, 'by which alone (so runs the prospectus) the important objects of the company can be effectually attained.'

It is interesting, also, as shewing the growth of population on the coast, and the movement of passengers, to quote the following additional paragraph from the original prospectus:—'The distance from Valparaiso to Panama is about 2,500 miles, and the countries bordering on that line of coast contain a population of upwards of 4,000,000 of inhabitants. The communication by land, which is everywhere extremely difficult and expensive, in some places is nearly impracticable, and the existing intercourse between the large cities and towns of these extensive countries is greatly impeded by these circumstances on the one hand and by the uncertainty of voyages by sailing vessels on the other. Notwithstanding these obstacles, this intercourse has of late years considerably increased, the number of persons travelling along the coast amounting to no less than

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8,850, annually as the documents before the public prove. The facilities that steam will afford must necessarily increase this communication, and give a new impulse to the commerce of the whole of the Pacific States, developing more rapidly their great natural resources, and giving them a commercial stability and importance far beyond that which they now enjoy.'

The British Government at that time had determined to establish a steam packet service between England and the West Indies (the Royal Mail Steam Packet Company), so that it was expected, by means of the Isthmus route, to reduce the voyage to Callao to about thirty days, which, via Cape Horn, occupied a period of about four months.

Mr. Wheelwright proposed to commence the service by three steam vessels, but 'considering the wide distance of space and time between the Pacific coast and European resources, it was recommended by the coast merchants, in public meeting assembled, and who took a lively interest in the scheme, that a fourth be added by way of reserve in case of accident.'

Meetings were held in the several Republics, and votes of thanks were passed to Mr. Wheelwright 'for his exertions in an enterprise which they considered would be attended with great advantages to British and foreign interests.'

Towards the close of 1840 two boats, the 'Chile' and 'Peru,' were despatched from Liverpool to open the new service along the West Coast. These were wooden paddle steamers of 700 tons register, with engines of about 150 horsepower, their extreme length

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being 198 feet, and breadth 50 feet. If we briefly contrast these steamers with the 'Mexico,' one of the latest additions to the Pacific Company's purely west coast fleet, which now includes some 20 steamers, we shall see the progress which has been made by this company, though there are others, as indicated in Chapter XVIII., and possibly too much tonnage on the coast. The 'Mexico' sailed for the west coast on the 30th July, 1902. Her dimensions are 400 feet

A. W. BIBBY, ESQ., CHAIRMAN, THE PACIFIC STEAM NAVIGATION CO.

R.M.S. 'MEXICO.'

long, 52 feet beam, and 29 feet deep. She has a registered tonnage of 5,548 tons, and has accommo-

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dation for 130 first and 200 third class passengers. Arrangements are made on the main deck for the carriage of cattle, and on the spar deck aft traders' stalls are fitted, as the steamer is, as already named, practically a travelling market right along the coast. At every port of call traders come off to the steamer to

MARKET ON DECK.

buy and sell fruits, vegetables, fowls, baskets, ponchos and a variety of household articles.

A humorist on the coast—Mr. A. D. Hinde—recently composed the following song, which will be of special interest to all connected with the Pacific Company:—

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"A LAY OF THE OLD PACIFIC.

There was a gallant captain, on the old Pacific Line,
And he sailed from Panama to Coronel;
He was often heard to boast, that he 'hoped he knew the coast,'
And he liked to let you know he knew it well.
His moustache was very flowing, and his language very glowing,
And his funny little yarns were choice and rare;
And he had a dreadful way, nearly every sailing day,
Of indulging in a gentle little swear.

But he'll never sail again,
On the old Pacific Main,
He'll never shock the ladies any more;
For he's let his anchor go,
Where the breezes cease to blow,
He's got a snug appointment on the shore.

He used to draw his pay, in a very careful way,
When he fancied that exchange was going to rise;
And he needed all his dollars for his faultless cuffs and collars,
Which were always of the grandest shape and size.
Upon his upper deck you could never see a speck,
And his steampipe always glistened in the sun;
And he wore a shiny tile, of the very latest style,
When he landed after firing off his gun.

But he'll never fire again,
From the old Pacific Main,
He'll never wake the echoes any more;
For he's let his anchor go
Where they never care to know
If he has the Chili ensign at the fore.

He was careful when at sea, as a captain ought to be,
And to hug a nasty coast could not endure;
But in making Valparaiso, he was frightened of its bay so
That he'd go round Juan Fernandez to make sure.

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If a stormy wind arose, or a fog should interpose,
He would think that he was treated very wrong;
And how others made their way he really couldn't say,
And it took him all his time to get along.

But he'll never sail again,
On the old Pacific Main,
Nor go round Juan Fernandez any more;
For he's let his anchor go,
As the junior captains know,
In a decent little billet on the shore.

So officers afloat, who on snug appointments doat,
Fix your eye upon the moral of my lay:
Keep your vessel trim and taut, as your orders say you ought,
And be sure you never overdraw your pay.
When you enter in the morning, let your gun give ample warning,
So the 'Customs' can be 'off' with proper speed;
Slew her round with every care, and give orders to prepare
The appetising draughts the Customs need.

And you'll never sail again
On the old Pacific Main,
You'll never ring the 'Stand by' any more;
For you'll let your anchor go
Where your corpulence will show
That you've got a fat appointment on the shore."

Population is needed in Chile, and to this end she should direct her efforts. The population of Great Britain, according to the census of 1899, was roundly forty-and-a-half millions in an area of 314,339 square kilometres, whilst that of Chile is three-and-a-half millions in an area of 752,912 square kilometres. It is estimated that twenty millions more people can find a livelihood on the mainland and on the large islands in

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the southern districts of Chile by means of agriculture, cattle breeding, etc., and by a better exploitation of the mines and forests.

The language of the country is Spanish, the Spaniards having entered the country from Peru shortly after its conquest. Prescott recounts how Diego de Almagro received the portion south of Peru called Chile. He did not, however, succeed in taking possession, for he had to deal with a stubborn, warlike people, who declined to make way for the foreigner. Almagro fought hard for a footing, but was forced to retreat disheartened. It remained for Pedro de Valdivia to undertake the arduous task, and he succeeded, after great difficulty, in penetrating as far as the centre of Chile, but he never conquered the Araucanians. It was not until the middle of the sixteenth century that the Spaniards were able to extend their sway over the whole country. Early in the nineteenth century, as the result of the trade restrictions enforced by the Spanish rule, and the consequent poverty and hardships which had to be endured in the country, revolution ensued, and, in 1817, independence was established. The story of the Revolution is one dealt with by other writers, but it is full of inspiration, and records the exploits of many a hero, not the least of whom was General O'Higgins, of Irish descent.

The money used principally in Chile is paper, the peso or dollar being nominally worth 18d., but at the time of writing 16d. only. There are 1, 2, 5, 10, 20, 50, 100, 500 and 1000 peso notes, but

NOTE.—The Chilian paper dollar is now (1907) worth only about 1/-.

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the two last-mentioned are seldom used. There are also gold, silver, and nickel coinages. The gold coinage includes $5, $10, and $20; the silver 5, 10, and 20 centavos and $1; and the nickel pieces of one-half, one, two and two-and-a-half centavos. Gold coins are worth by Government standard 1s. 6d. per peso, and the silver peso about 1s. 3d.

The ports of Chile are classified under the titles of Major and Minor. Goods shipped for minor ports require to be previously cleared by the consignees at the Custom-house in the nearest major port.

The major ports are:—Arica, Pisagua, Iquique, Tocopilla, Antofagasta, Taltal, Caldera, Coquimbo, Valparaiso, Talcahuano, Coronel, Corral (Valdivia), Ancud, and Port Montt.

The principal minor ports are:—Junin, Caleta Buena, Cobija, Gatico, Chañaral, Carrizal-Bajo, Huasco, Peña Blanca, Totoralillo, Guayacan, Tongoy, Los Vilos, Tomé, Penco, Lota, Lebu, and Calbuco.

There are other small ports not served at present by regular steamers, and the shipment of goods to Chilian, as to all South American ports, is governed by special regulations, the non-compliance with which may lead to fines and possible forfeiture at the port of discharge. The freight is charged per ton weight or measurement, at the option of the shipowner, and varies according to the nature and value of the goods and the distance carried.

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Chile is shewing evidence of progress in every direction: she is increasing her network of railways and telegraphs, has formulated colonisation schemes, and her exports, though the output of nitrate has been restricted by a combination, are also advancing, copper especially.

Chilian credit stands high, and as the country promptly meets its liabilities, it can without difficulty raise the means for development and progress.

The values of the imports and exports in the year 1905 were respectively :—

Imports	...	...	...	$188,596,418.
Exports	...	...	...	265,209,192.

Comparing these with those for 1900, they shew an increase in the imports of $60,058,276, and in the exports of $97,534,557.

The value of the imports of the two principal importing countries was in

	1900.	1905.
Great Britain,	$42,481,942.	$71,120,129.
Germany	34,321,877.	47,587,686.

These figures are sufficient evidence of the fact that Great Britain is now holding its own against Germany in the matter of imports. In 1900 we shewed a diminution of 4·36 per cent., whilst Germany shewed an augmentation of 15·37.

The exports for the years 1900 and 1905 were as follows :—

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	Value 1900.	Value 1905.
Pisagua	$12,273,668.	$16,742,579.
Iquique	83,268,831.	76.940,413.
Tocopilla	14,190,246.	27,651,646.
Antofagasta	9,062,943.	14.587,868.
Taltal	7,487.342.	21.918,100.
Caldera	3,325,296.	1,743,663.
Carrizal Bajo	1,249,600.	71,514.
Coquimbo	10.438,466.	4.558,020.
Valparaiso	12,792,527.	35,462,911.
Talcahuano	2,087.129.	4,267,009.
Coronel	9,297,967.	47.697.
Valdivia	2,200,620.	3,117,111.
	$167,674,635.	$207,108,531.

These figures are taken from the Estadistica Comercial de la Republica de Chile, and are therefore official. The ports of Pisagua, Tocopilla and Valparaiso seem to be making the greatest progress. The exports to Germany are only about one-sixth of those to Great Britain.

C.S.A. de V. S.S. "PALENA."

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CHAPTER XX.

CHILOE ARCHIPELAGO. ANCUD. CALBUCO. PORT MONTT. VALDIVIA. LEBU. LOTA. ARAUCO COAL MINES. CORONEL. CONCEPCION. PENCO. TOME. TALCAHUANO. SAN ANTONIO. LLICO. CURANIPE. BUCHEPUREO. CONSTITUCION.

WE sailed from Corral in the P.S.N. Co.'s steamer 'Mendoza,' on the evening of the 18th of November, for Ancud (Island of Chiloe), Calbuco Island, and Port Montt, and it was perhaps fortunate that we had dinner almost immediately, as there was a sudden fall in the barometer, followed by a heavy storm, though of short duration, illustrating the truth of the old adage :—

'Long foretold, long last,
Short notice, soon past.
Fast rise after very low,
Indicates a stronger blow.'

As it happened, we were all fairly comfortable, and I have long held the opinion that the best cure for sea sickness is to keep warm and keep on eating. There is a good old custom on the west coast steamers which serves to create a feeling of sociability and friendliness amongst the passengers. It is that of having a toast each evening at dinner, varying according to the day of the week. The following is the list as we remember it :—

Sunday—Old folks at home.
Monday—Owners of the steamer—P.S.N.C. or C.S.A.deV
Tuesday—Captain and crew.
Wednesday—Our noble selves.

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Thursday—(Plum pudding day) Absent friends.
Friday— Our native land.
Saturday—Wives and sweethearts, or the reverse, according to the condition of the proposer, whether married or single.

The distance from Corral to Ancud is 134 miles, and, owing to the storm, we did not arrive there until nearly noon of the day following our departure from Corral. The people in Ancud say that it rains there thirteen months in the year, and as on our arrival the port was shut out from view by the heavy rain, we determined to postpone our visit until the return journey. There was, however, some excitement in the port, as the Chilian steamer 'Amazonas' nearly got aground owing to the parting of her chain cable. As soon as she was out of danger her pilot joined our steamer for the run to Port Montt.

The Island of Chiloe, as we saw it on our return from Port Montt, is well wooded, and must, when the weather is fine, appear extremely beautiful. It is covered with fine trees, and the land is lower than most of the large islands along the western coast of Chile. Its average elevation is 500 feet, though there is some land running up to 3,000 feet. This island, which forms the principal part of the Chiloe Archipelago, is about 100 miles long from north to south, and 38 miles broad. The timber grown on the island is good hard wood, and is largely exported. Ancud is situated in the north, and has a population of about 5,000. The anchorage is about two miles off the town. There is a small steam tug at the port, and a mole which is rapidly decaying. The town presents nothing of

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interest, and the people, for the most part, are extremely poor, living principally on oysters, which are very plentiful, and 'chorros' (mussels). Some of the natives live entirely in their fishing boats, and whilst we were at Ancud a number of these people came on shore for vegetables, there being always a good supply of excellent potatoes, which they cook on the beach. Some twenty years ago life in these islands of the Chiloe Archipelago was almost unendurable for anyone but a native, but the Government has gradually brought about a better state of things, though there is still room for improvement.

The island of Chiloe is divided from the continent, to the eastward, by the Corcovado and Ancud Gulfs, and the northern extremity is separated from the mainland by the Chacao Narrows.

Given fair weather, the sail from Corral to Port Montt is a pleasant one, and after passing Ancud the navigation is similar to that of a winding river, with beautiful and changing scenery on either side, now pastoral with the signs writ by human effort on the landscape, now steep and rugged, as if fresh from the hand of its Maker, and with the bold, grand chiselling of the master-hand still plainly marked upon it.

We made El Fuerte or Calbuco (island of Calbuco), which is 45 miles distant from Ancud, about six in the evening, and having taken a quantity of timber on board, proceeded without landing, as the weather continued very bad. During the night we experienced a 'norther,' which continued until our arrival in Port Montt. Calbuco Island is fairly well inhabited, and is

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about 85 feet high. The town is small, and is situated on a steep slope near the north-east extremity of the island. The anchorage is about one-third of a mile from the town, in 22 fathoms of water—spring tides rise from 15 to 20 feet. The only trade is in wood, and this is declining. Shortly after arriving at Calbuco, as it was low water, we saw what remains of the wreck of the steamer 'Valparaiso,' after some twenty years of immersion, and our pilot told us that quite recently a diver had recovered from the wreck some copper and cognac, and that the latter was found to be in excellent condition.

The navigation from Calbuco to Port Montt requires great care, as the channels are full of shoals and rocks, and an experienced pilot is necessary. Port Montt is a prosperous little town of about 3,000 to 4,000 inhabitants, established by the Government in 1853, and it is the port for the German colony of Llanquihue, some 15 miles distant, on the banks of the lake of that name. The Pacific Steam Navigation Company has a regular fornightly service between Valparaiso and Port Montt, and at one time they used to beach their vessels for repairs at the last-named port—in fact the place where the vessels were beached bears the name of 'El dique' (the dock). The distance from Calbuco to Port Montt is 22 miles, and the port affords excellent anchorage, though open to the southward. Spring tides rise at this port from 18 to 20 feet, and neaps 14 to 15 feet. After transacting our business, we ascended the hill at the back of the town to get a view of the Cordilleras and the

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surrounding country, and were well rewarded for our exertions.

LAKE LLANQUIHUE, NEAR PORT MONTT.

Three-fourths of the population of Port Montt are German, the first colonists having been of that nationality, and there are people living at Port Montt who were born there and cannot speak any language but German. In the afternoon we took the captain's gig, and explored the natural dock, subsequently landing on an island occupied by a farmer. There were plenty of hawks and other birds about, so that we were able to get some shooting. It was most interesting on the island. The vegetation resembled that of the tropics, huge ferns and bamboos forming together almost impenetrable thickets. In the farmer's kitchen garden

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the apple trees were in blossom, and the gooseberries ripe for plucking, whilst the flower garden presented a magnificent show of roses and other blooms. We had

PORT MONTT.

intended to ride from Port Montt to Lake Llanquihue, but unfortunately were not able to procure horses. The road across country to the lake is, we were told, charming, and on the lake itself are a number of small steamers, which ply between the several farms abutting on its banks. A two hours' journey from the eastern end of the lake brings the traveller to Lake Todos los Santos.

The houses in Port Montt are built for the most part of timber, and the town runs round the margin of the harbour, and is very much in appearance like

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a German '*Dorf*.' There is a landing pier, but it is becoming unsafe for general work, and the cargo launches are beached opposite the quay warehouse

NEAR PORT MONTT.

where operations are carried on. Quantities of cargo, such as casks of aguardiente, etc., are floated off to the steamer.

The natives here, for the most part, are very poor, and look very much like brigands in their ponchos. They live, as at Ancud, chiefly on 'chorros' and sea-weeds, and are dreadfully lazy, as they can get food so easily. The better class have comfortable homes, and make money. The market was an extremely dirty place. Women were lying about smoking, and were ready evidently for a little pleasantry, as one of them laughingly enquired of our captain if we had come to

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buy 'hearts.' There is a sort of floating population in the place, as whole families of the natives live in boats, and come on shore, as at Ancud, merely for supplies of flour, meal, and clothes, though they do not trouble themselves with an abundance of the last named. A number of the boats were drawn up on the beach, and cooking operations were in progress. The natives love a life of semi-indolence and adventure, and many tales were told us after '*Abendbrod*' that night of perilous journeys in the piratical days of long ago.

Leaving Port Montt in the early hours next morning we made, in due course, Calbuco, Ancud, and Corral, at which last-named port a number of cattle were waiting in lighters to be shipped. As the steamer had, consequently, to remain at the port for several hours, we left her, and proceeded by steam launch to Valdivia. It was simply splendid steaming up the river, the hills on both sides of which were covered with spring foliage, and, although it rained heavily at times, the pleasure of the trip was not marred in any way. The city of Valdivia, which was founded in 1552 by Pedro de Valdivia, a follower of Pizarro, lies on both banks of the stream, and is really built along it. It is a thoroughly German colony, in fact the whole province of Valdivia has been set apart for the German and Swiss immigrants, and the population is in all about 45,000. The want of railway communication formerly prevented any large growth of the city, though it is now becoming a very important commercial centre, with some 10,000 inhabitants,—its lager beer being known all over the

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west coast of South America, and its leather throughout Germany. It took us an hour and ten minutes to steam up from Corral. The tanneries are extensive, as there is an abundance of 'Lingué' trees in the vicinity. The Andwandter Brewery is the great institution in the town. The manager, who showed us over the brewery, told us that the business was commenced by his grandfather some sixty to seventy years ago. He had emigrated to the district, and his occupation was that of a druggist. At the suggestion of his wife, he made a few dozen bottles of beer for the use of his household. Some of the neighbours who sampled the beer were loud in their demands for some, and so Herr Andwandter became a brewer, and from this small beginning has developed a brewery, the beer from which is much appreciated throughout Chile.

Valdivia is rapidly becoming a handsome town, there being many substantial and ornamental buildings, and others are in course of erection. There is no doubt the Germans are a wonderful people,—industrious and thorough, and whilst extremely keen in matters of business, they are never parsimonious in anything connected with their homes, which they love to beautify, as well as the towns and cities they inhabit.

Vessels drawing 12 feet of water can make Valdivia by the short, as well as by the long, river round the Isla del Rei, which is somewhat deeper, though the voyage by it occupies an hour longer. Preference is given to the long river, as it has fewer sandbanks.

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VALDIVIA.

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There are a number of moles at the town, connected with the several industrial establishments and the railway station.

VALDIVIA.

The exports of Valdivia consist of leather soles, wheat, oats, beeswax, honey, bales of pressed wool, horse-hair and horns, beer, alcohol, lingué, elm bark, timber, hung beef, salt and dried meat, flour, brushes, shoe lasts, cabinet makers' glue, cattle, soap, candles, blacking, and machinery. The imports comprise all kinds of agricultural machinery, steel and iron in bars, iron in plates, zinc for roofing, tin, charcoal, tools, textiles, hardware, oils, &c.

There are a number of wooden launches of from 50 to 100 tons capacity, which are towed to and from

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Corral with cargo (about 60,000 tons per annum), the freight being about $2 per ton weight or measurement.

A regular mail service is maintained by small steamers between Corral and Valdivia.

There is a railway from Valdivia to Union, Trumag, Osorno, and intermediate stations. The length of the line is 147 kilometres. A line has been projected between Osorno and Port Montt, and another is in course of construction, which in a few years will connect the south with the north, and which runs from Valdivia to Lancoche and Pitrufquen, and thence north to Valparaiso.

Gold has been found in the district, and two mining companies have been formed, though it seems to me that gold is more rapidly being found by means of the numerous factories and industrial establishments.

When we got back to Corral the shipping of cattle was still going on. The cattle are very lean, and are sent to more northern ports to be fattened. The animals were being slung up from the launches, and did not seem very much to approve of the process, as, on landing over the hatchway, they immediately made frantic efforts to get on to their feet, and when they were released from the sling usually rushed along the deck, to the amusement and sometimes consternation of the native crew. Formerly cattle used to be slung on board by a rope tied round the horns, but this method was thought to be cruel, and was very properly stopped by the Government. Now and then, however, as on the occasion we are recording, a bullock becomes mad, and the only way to get it out of the launch is to

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lasso it round the horns, and then set the winch to work. Even this is difficult, and it took twice as long to ship the mad animal as it did the other fifty or so which the launch brought. It was like a Spanish bull fight, and the bullock held possession of the launch for a considerable period. The moment any of the men got into it, the bullock would rush at them, and there were some narrow escapes which caused great amusement to the crowd of onlookers.

Sailing north we made the port of Lebu, 141 miles from Corral, but did not land. Lebu takes its name from the river which empties itself there, and is a town of about 7,000 inhabitants. The town and church looked quite attractive from the ship. The port is much exposed to the north, though sheltered from the south-west swell by a ridge of rocks extending about half a mile northward from Tucapel Point. In addition to coal, quantities of bark are regularly exported.

Lota, our next port of call, is 53 miles north of Lebu, and the voyage there was made in splendid weather. We passed Santa Maria Island *en route*, and in an hour afterwards were at anchor. Here we disembarked, as we wished to have a look at the copper smelting works and the coal mines of the district. The great Cousino coal mines are at Lota, and extend for some distance under the sea. The slate and shale covering the coal seams constitute a natural watertight tunnel, and no difficulty has consequently arisen from the proximity of the sea.

A high peninsula juts out over a portion of the

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coal bed, and on this Madame Cousino built a palace surrounded by a lovely park. Both palace and park have been frequently described, so that beyond stating

LOTA.

that none of the descriptions of the park are overdrawn, we cannot add anything to what has been written. The palace was closed at the time of our visit.

There being an abundance of coal at Lota, other industries have been opened, such as the copper smelting establishment alluded to, and brick and glass works. All the materials used are native to the country. These works are all under the ægis of the Compañia Esplotadora de Lota, of which Madame Cousino (now deceased) was the principal, and the several works and departments are connected by rails which run on to the

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pier. The Lota Company owns vessels (steam and sail) which carry the manufactures and the coal along the coast, and return with ores, etc. At

COUSINO PALACE.

the end of the pier, or mole, there is only from 18 to 21 feet of water, and consequently vessels of deep draught have to complete their coaling from barges. A large mole, constructed of the refuse from the smelting works, is in process of formation. The port is exposed to the north-west and west. The population of Lota is about 5,000.

Our visit to the copper smelting works we shall deal more particularly with in a later chapter. From Lota we took train to Coronel, where we stayed for the night, and on the following day made an inspection of the Arauco Coal Company's mines. We started for

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Colico, some forty miles distant, early in the morning, and inspected the Peumo, Colico, and Curanilhué mines, which together produce about 200,000 tons of coal per annum. This visit we have dealt with in Chapter IV., and it remains only to remark that the country we passed through reminded us very much of Scotland, though possibly the prevailing Scotch accent in the carriage may have helped to create the delusion. We spent a splendid day, and got back to Coronel after twelve and a half hours of travel, well pleased with our entertainment and with all we had seen. Coronel is practically only a coal shipping port. There is a mole at the port for working cargo.

Two hours later we left for Concepcion, the third city of importance in Chile. It has about 28,000 inhabitants; is a clean and well-arranged city with excellent hotels, and there are many beautiful 'quintas' along the banks of the river Biobio, on which it stands. Concepcion is surrounded by some of the most fertile regions of the country. The inhabitants are principally engaged in trade with the interior, and in the production of wines and preserved fruits. There are several large flour mills, and an important Government engineering establishment. A large business is done in grain, the shipping ports for which are Talcahuano and Penco, a few miles distant.

To the north of Concepcion, on the main line to Santiago, is the town of Chillan (about 16,000 inhabitants), which carries on a thriving trade in wine, cereals, and other agricultural produce. After spending a short time in Concepcion we entrained for Penco, a

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port built on the site of the original city of Concepcion, which was destroyed in the great earthquake of 1835. Here we rejoined the 'Mendoza,' and, as we passed out of the bay, got a sight of Tomé, a small and prettily situated port on Concepcion Bay, noted for its wine shipments. We also got a glimpse of Talca-

TALCAHUANO.

huano, where the Chilian Government has built two extensive dry docks and breakwaters. The larger dock is 125 metres in length, and the smaller 75 metres. Talcahuano has a population of about 15,000 inhabitants. There is a wharf at the port, but not sufficient depth of water to admit of steamers lying alongside it. There are a number of launches and several small steam tugs.

Concepcion Bay forms possibly the finest harbour on the Chilian coast, being well sheltered by Quiriquina Island.

The distance from Penco to Valparaiso is about

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240 miles, and we arrived there in due course, being favoured with splendid weather.

Between Concepcion Bay and Valparaiso there are several minor ports, viz., San Antonio, Llico, Curañipe, Buchepureo, and Constitucion, to the last named of which we made the special trip described in the next chapter.

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CHAPTER XXI.

VALPARAISO. NORTHERS. OCTOPUS YARN. PORT FACILITIES. LOCAL CUSTOMS. VINA DEL MAR. MIRAMAR. THE CANCHA. VERDAD Y VERDAD PURA. MORE YARNS. QUILPUE. CHILIAN HUASO CUSTOM. QUEBRADAS. LIMACHE. CONSTITUCION. RIO MAULE. TROLLEY RIDE. THREE GRINGOS. MAQUEHUA TO TALCA. TALCA TO SANTIAGO.

VALPARAISO, the chief port of Chile, is much exposed to severe 'northers' during the whole winter. The bay is semi-circular in form, about two and a half miles wide and one and a quarter miles from the entrance to the mole. It is capable of accommodating a large fleet, and but for its northern exposure, which is a serious drawback, would be an ideal one. During the winter season the shipping is frequently imperilled, and a fair idea of the damage which a 'norther' can do, may be obtained from our illustration. The 'norther' in question happened in 1899, when a great portion of the 'Malecon,' or Esplanade, on which a number of cranes are placed, was wrecked, and the railway metals running along it were twisted like hemp. The repairing of the damage cost between two and three million pesos. Quite a number of vessels sank at their moorings, and considerable damage was done to shipping generally. In Chapter XIX. we referred to the phenomenon of the afternoon seabreeze, which prevails in the dry season at Valparaiso, and whilst we experienced this during our stay at the port, we confess to a feeling of disappointment at not witnessing a 'norther.'

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AFTER A "NORTHER," VALPARAISO

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It has other interesting features besides 'northers,' judging from a story told me, and as the tale may entertain my readers, I give it as I heard it on the morning of my arrival in the bay:

'Some years ago the steamer 'Potosi' was lying 'at anchor in the deep bay of Valparaiso. The 'morning was beautiful, and there was not a ripple 'disturbing the calm surface of the sea. Alongside 'the vessel were several boats, some two-oared and 'of the kind which Chilian fishermen use, something 'between a whale boat and a 'dug out.' Every now 'and again a man might be noticed pulling in a fish 'from a five and thirty fathom depth, so that there 'was always fairly good sport, and something of 'interest for the observer. Just under the surface 'were numerous fish as large as whiting, and these 'being very bony are used merely for bait, but are 'pretty to watch swimming about. The occupant 'of one boat—a kind of 'dug out'—was busy haul-'ing in his line on the outer side. His boat was full 'of fish, and a paddle lay across from side to side. 'Suddenly it was observed that all the surface fish 'disappeared in haste and in all directions. Almost 'immediately afterwards a huge strangely coloured 'something was seen to rise to the surface in oily 'silence. It was roundish in form, and about five 'feet in diameter. It came up between the steamer 'and the boat, and in a few seconds there was little 'room for doubt as to its character and intentions. 'In a moment two or three arms were thrown over 'the boat, and one reached towards the man. The

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'arms were huge, long, tapering tentacles, and seemed
'easily to include the whole boat and drag it down.
'The man had not seen this awful demon of the
'deep, nor ever heard of it, but the men in the other
'boats had, and all shouted the alarm. Turning
'round he faced a terrible spectacle, a shapeless
'kind of monster, changing colour from black to
'brownish red and then to steely blue, but, worse
'than all, two immense cold blue eyes, on long
'stalks, stared at him. A steady, determined, mer-
'ciless gaze was in those eyes, and the man seemed
'for the moment paralysed by the cold relentless fury
'of the creature—the boat being now level with the
'water, and one arm embraced him. In despair the
'man seized his paddle and frantically struck at
'his enemy, which, alas, seemed to have no vital
'parts, and to take no notice of the assault. A
'creature so cold, so heartless, so completely with-
'out emotion would (so said the narrator) be
'considered an ornament to any financial institu-
'tion. The other fishermen had by this time
'recovered their senses, and rushed to the rescue
'with loud cries and sharp knives. It was a ques-
'tion of seconds, and the octopus gauged it nicely.
'He saw that the boat was under water at one end,
'but those knives would soon disarm him, soon cut
'his powerful arms to pieces. The eyes moved, but
'there was no sign of fear; then, in a moment, the
'arms were thrown straight up, and the octopus
'seemed to say, 'I'll get you to excuse me,' for his
'arms rolled up neatly into coils, his eyes seemed to

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'retire, and he sank quietly, slowly, without a ripple 'into the deep. It seemed as if the colour of the 'flesh turned dark again as he disappeared, and a 'cloud of ink marked the spot which he had occupied. 'The man who had been attacked was left sitting in 'his boat, pale, though possibly pleased that he had 'missed an unpleasant appointment. Anyhow he 'slowly paddled home, possibly in doubt whether he 'would not see the thing playing the piano with its 'eight arms. The watchers were silent for a time as 'if they had missed an awful fate, and then fell to 'speculating upon the reason which made the octopus 'come up. The conclusion was that he resented the 'fish he was in search of being hooked and drawn up 'before his eyes. Consequently he came up to see 'about it, and was quite conscious of the fact that he 'could master a shark or a whale, or even a man, 'providing he had not a knife in his pocket.'

Our captain had reasoned the matter out very thoroughly and he sermonised us as follows :—

'Though man has succeeded in making the lion 'leap through hoops, the education of the octopus 'leaves much to be desired. Indeed, it may be said 'of him that he, like the clown's donkey, after years 'of training, only does what he wants to. An 'educated octopus would, however, give much satis- 'faction as an unprejudiced guardian in the flooded 'vaults and treasure rooms of the Bank of England.'

There was an immediate and unanimous call for 'cocktails' after this story, as something strong was needed to wash it down, and indeed some members of

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our party, who had become steely blue like the octopus during the recital, required an antidote.

Valparaiso (Vale of Paradise) was named by its founder—Saaverda—after his native village in Castille.

There is a fine promenade extending along the narrow stretch of land which has been reclaimed from the sea, and the town is built right up the hillside, and along the margin of the harbour. The upper town is in terraces, and in some parts overhangs the lower portion. The offices and custom-house face the sea, and the view of Valparaiso from the deck of a steamer is extremely picturesque. Vessels can load and discharge alongside the mole, but work is principally done in the bay by launches, of which there is a good supply. The principal steamer lines using the port have their own launches, as well as hulks fitted as store ships, repairing factories and laundries. The mole is 305 metres long, and is divided into two sections, one for launches and the other for ships. The average depth at low water (there is a rise of about five feet at spring tides) is 39 to 45 feet, and inside 26 to 30 feet. A number of small cranes are fixed on the mole, and also one capable of lifting forty tons. There are two floating docks at Valparaiso, but these are not large enough to meet the requirements of the port, and are becoming in other respects antiquated. The larger dock is 300 feet long by 70 feet broad and 21 feet deep; and the smaller 267 × 65 × 14 feet. The former is supposed to be capable of lifting a vessel of 4,000 tons, and the latter 2,200 tons. The want of suitable dock accommodation is much felt on the coast,

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VALPARAISO BAY—PASSENGERS' LANDING MOLE.

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and it is time the Chilian Government came forward to assist the municipality to provide docks capable of

VALPARAISO.

dealing with the largest men-of-war and steamers using the port. Valparaiso has all the conveniences of a

FLOATING DOCK—VALPARAISO BAY.

large town. Its tramways are conducted by women, wearing a kind of uniform, and who are paid about 15 dollars per month.

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The native ladies of Valparaiso, for the most part, go about in the morning in mantillas—though they are only obliged to wear these at church—a very becoming national custom.

VALPARAISO.

Cart drivers ride alongside their carts on horseback, like postillions—the roads being bad.

Vina del Mar ('vineyard of the sea') is the favourite suburb, and it is really a pretty place, though somewhat spoiled by a sugar refinery. Miramar, not quite so distant from Valparaiso, is the fashionable seaside resort and bathing place, though the sea is generally somewhat rough and dangerous. The drainage of Vina del Mar is, in my opinion, capable of

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a great deal of improvement, and there is much more typhoid and similar complaints in Valparaiso and district than need be if the matter were taken in hand by some responsible authority.

In the early morning, the best time of the day, sports are indulged in, such as golf, tennis, etc., and the roads leading to the 'cancha,' or racecourse, are alive with men on horseback. The animals are so cheap, and can be kept at a livery stable for so little, that almost everyone rides. The racecourse is one of the finest in South America, and the grand stand and 'ramadas,' or boxes, are covered with ivy and other climbing plants. At a race meeting the scene must be a splendid one. At one end there is a golf ground, and though not altogether an ideal one, it has attracted numerous votaries, who form one of the most popular clubs in the district. The people seem generally to know how to enjoy themselves, and there is perhaps not that serious air surrounding business as in our own country. Everyone smokes at business, from the office boy upwards, and work goes on, whether as the result of the climate, or the mixture of Spanish blood which prevails, in the expectation that there will always be a 'mañana' (to-morrow). There are two kinds of truth in the language, viz., 'truth' and 'pure truth,' and we must confess that we feel somewhat drawn to a discussion of the subject. It is very suggestive—suggestive of temperament, of instinct, of mental and bodily vision,—suggestive also of that hair-splitting of ideas which prevails chiefly in French literature, and which is attractive if merely on the grounds of its

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searching analysis. It startles the mind when first encountered with something like the steely blue effect our octopus story produced, but the aftermath is different, as it discovers not relief, but an incentive to further thought and enquiry. It almost touches what is known as 'policy' in our own country, and which has as many if not more arms than the octopus, and most of them quite as dangerous. Personally I never think of truth in the abstract without remembering the story told in 'Les Miserables,' by Victor Hugo, of the priest and the convict, and I commend it to my readers as an apt illustration of 'verdad' and 'verdad pura.'

Some of the foreigners resident in Valparaiso have their fads as well as other people, and one U.S.A. merchant had up in his store, in a prominent position, the sign, 'In God we trust—all others pay cash.' When we told this story to a friend, he asked us if we knew the reason of the motto 'In God we trust,' which appears on the obverse side of the American dollar. As we confessed our ignorance, the reason we got was that the dollar really only contains 73 cents worth of silver, and, in order to overcome the scruples of the religious party, the Government had adopted the motto to shew that they had to trust in God for the remaining 27 cents.

One of the reservoirs at Valparaiso stood on the hillside, some distance up from the Malecon, and owing to its bursting some years ago with disastrous consequences, it has become one of the stock subjects of conversation. A large number of claims were made

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upon the Waterworks Company, and a story which we heard is possibly worth repeating, seeing that we have again got into a yarning vein. An Irishman

VALPARAISO.

appeared in court the morning after the disaster, and when the presiding magistrate asked him what he wanted, he replied, 'Shure, yer anner, the reservoir's burst.' 'Well,' said the magistrate, 'go to the Waterworks Company, I hav'nt anything to do with it.' 'But,' persisted Pat, 'my name's McPhesey, and I kape cocks and hins, and they've been drownded.' 'Well, go to the Waterworks Company, it's not my business,' again retorted the gentleman on the bench. Next morning Pat appeared in court again, and the magistrate said, 'What! you here again?' 'Yes, yer

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anner," said Pat, 'I went to the waterworks.' 'Well?' 'and they told me I ought to kape ducks!'

Excellent rides may be taken over the hills to Quilpué, Limache, and other country places, where there are some fairly good 'posadas', or wayside inns, for refreshments. A custom of the Chilian 'huasos,' or countrymen, who are all splendid horsemen, is to 'pechar,' or when on horseback to shoulder the previous arrival away from the 'barra,' a long, roughly hewn tree trunk, set up horizontally in front of the posada, and at which the 'huasos' place themselves in line as they arrive. The 'huasos' remain mounted on their small and wiry steeds, and by steady and strong pressure of the horse's head and shoulders, the latest comer tries to force the others from the bar with the object of getting first place. Much excitement is aroused on these occasions, and strenuous efforts are made both by men and horses—the latter being fully up to the work—to resist the latest comer, who, however, by dexterous handling of his 'nag,' usually manages to displace those ahead of him, and get first on the line.

There is some very charming country in the vicinity of Vina del Mar, and by following one or other of the 'quebradas,' or valleys between the hills, this can be explored without any discomforts beyond those resulting from the exertions of climbing. We ascended one of these, following the course of the stream, and were repaid for our trouble by a most enjoyable climb. We saw quite an army of toads and frogs, and a snake came down the stream towards us with its head well

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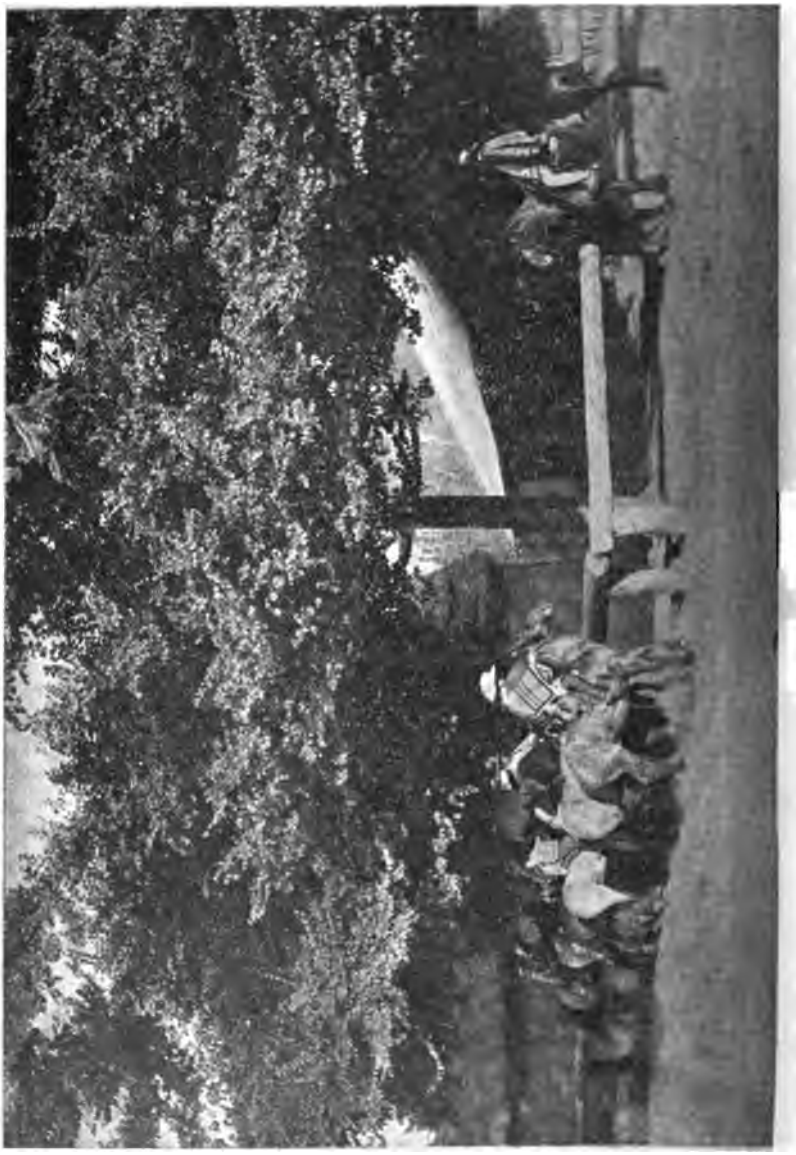

HUAMOW AT THE 'BARRA.'

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elevated, its forked tongue out, and its eyes—No! I must draw the line at snake stories, though the temptation to branch out in that direction is well nigh irresistible. The bed of the stream sparkled with

FARMING SCENE, CHILE.

mica, and it is said that all the streams in this district more or less deposit gold, which is washed down from the hills. We looked for gold, as everyone does, but without success.

Limache is about thirty miles distant from Valparaiso, and the railway to Santiago passes through it. It is, however, a favourite ride, and the paperchases on horseback, which form an exciting amusement for the young folks of Valparaiso, and some older ones, usually take this direction. We were not in condition for so long a journey in the saddle, and gave preference, therefore, to the iron horse. The railway follows the

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course of the 'estero' for a considerable distance, and as it flows through a valley with a fair stretch of meadow on either side, there were abundant signs of cultivation, and 'quintas' (villas) were seen at intervals all the way. Large poplars and willows formed a pleasant addition to the landscape, and plenty of cattle were visible, though the ground was already (middle of December) putting on a parched appearance, and as rain was not expected until the middle of April, it was not difficult to imagine what it would then look like. The journey by rail must be a dreadfully dusty one, especially in the afternoon, when the wind blows from the south. On arrival at Limache, our attention was directed to a grove of walnut trees, and the adjoining gardens were a mass of blooms, though the rose season was almost over. Quite a number of horsemen were in evidence, having ridden from Valparaiso, a pretty tough five hours' ride. The town is of the scattered kind, with some fine 'quintas,' and plenty of mud hovels with the cooking stoves built outside—for all the world like beehives. There are some excellent drives in the neighbourhood; the craze for growing poplars in this district having added much to the beauty of the country. Altogether we were very favourably impressed with it.

A few days later we sailed for Constitucion in the new steamer 'Talca'—since wrecked—and quite a number of people came out to witness her arrival, she being the largest ever in the port. There is a nasty bar to cross at the entrance, especially in rough weather, and great care has to be exercised. The

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entrance is picturesque, and when the harbour is gained, about one mile up the Rio Maule, the town, like a pretty Swiss village, lies opposite the anchorage. There are about 8,000 people in Constitucion, and it is a pleasant summer resort for the Chilians. A good trade is done in grain and flour, and in wine, which comes from the Talca district. Almost anything grows in the neighbourhood—lemons and other fruits, and the warehouses or 'bodegas' contained quantities of lentils, calavances, flour, etc.

The progress of Constitucion has been somewhat retarded by the difficulty of crossing the bar. There is no mistaking the entrance to the River Maule, as there are two distinctive marks, viz. :—the Church Rock (about four miles N.N.E. from Cape Humos), so named from its appearance, and a mile further north a whitish coloured rock named Lobos, about 80 feet high. There is a small steam tug in the port, and a staff of Government pilots. A white flag is hoisted at the signal station when the bar is practicable, and a black ball when it is not.

It being our intention to proceed to Talca, and thence to Santiago, we chartered a rowing boat with six oarsmen to pull us up the Rio Maule, against the strong current, for a distance of about four miles, where we would reach the last point of a railway in course of construction to Constitucion. We had previously despatched a horseman to arrange for a trolley car to convey us to the nearest station. Shortly after starting we grounded on a gravel bar, but soon bumped over, and rowed up the river, with beautiful verdant sloping

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hills on either side. Now and then we came across a lighter, with flour and wood, proceeding down stream, the rowers rising from their seats each time they pulled back the lengthy oars. One boat going up stream was being towed by two men, who, almost naked, struggled along the bank, and sometimes in the water, hauling on to the tow line, and it looked unpleasant work under the hot, burning sun. After an hour's pull we reached our destination, and, jumping on shore, found some men fixing up a trolley car, which they said was intended for three 'Gringos' (a Chilian term for Anglo-Saxons), which tallied with our number. Italians are called 'Bachicha'; Portuguese, 'Dago'; Frenchmen, 'Gabacho'; Spaniards, 'Godo'; Argentines, 'Cuyano.' It would be interesting to trace the origin of these terms. The only one known to me is that of 'Gringo.' It seems that a long time ago a number of English sailors landed at Coquimbo, a little the worse for liquor, and paraded the streets singing the old song, '*Green grow* the rushes, oh!' The 'green grow' to the foreign ear became 'gringo,' and hence the name. The trolley was soon ready, and after securing the services of three youths to push us along, we got on to it with our luggage. It was eight miles to the nearest station from which a passenger train could be got, and the ride was a novel and interesting one, following the course of the Rio Maule through wild cuttings blasted out of the slatey rocks, and the hills on either side looking like wounded giants. Here and there the earth puts on the colour of blood, contrasting with the green and

NOTE.—"Gringo." I am told this word is really an old and classic Spanish corruption of "Griego," Greek, and to speak any unintelligible language is, in Spanish slang, "Hablar en Gringo."

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yellow foliage. Then the fast whirling, turbid river on our right, grey like a channel sky, the rocks on either side filled with mica, sparkling like diamonds in the brilliant sunshine, and the strange circumstances of a first trolley ride,—now requiring propulsion, now gathering momentum down an incline and speeding away like an express train,—tended to fill us with the silence belonging only to intense appreciation and intense or greater charm. Beautiful marguerites lined the track sides in places, and there was an abundance of wild lilies and other flowers. Then there was a cry from the boys of 'La maquina,' which meant that an engine was coming in the opposite direction, and we were on a single line. There was not much time to get out of the way, but quickly throwing our luggage to one side, and with all hands to the trolley, we turned it over and cleared the track just in time for the train to pass. Soon we got our trolley into position again, and had no further trouble until within a quarter of a mile of Maquehua (the station we were bound for), when we ran up to a car being loaded with wood, but this was a simple affair as the men got off the car and lifted us round; then on we went down a gentle incline to our destination. We then made for the wooden shanty which bears the name of 'hotel,' and through the boards of which the daylight streamed all round to shew up the dust and dirt of the interior. A nice little 'almuerza,' or breakfast had been prepared for three 'Gringos,' and everything was in readiness on our arrival. If the 'hotel' was not all to look at that one might desire, the breakfast was

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remarkably good and cheap. We were charged $1 per head (worth then about 1s. 5d.) for mutton cazuela, eggs and steak, omelette, coffee and wine. The table-cloth and utensils were clean, but there is a habit amongst waiters of smoothing the salt with the thumb which is scarcely pleasant. Hunger, however, sees little and forgets and forgives much. Whilst at breakfast three German railway officials arrived from Constitucion, somewhat begrimed and dirty, having made the journey on the coal tender of an engine, and they were eager for breakfast, at least we judged so from the altercation which took place with the 'posadero' in an adjoining room, but we were to learn the meaning of this later on. Breakfast concluded, we got the train for Talca, and, considering that the journey thence occupied three hours, the price of $2 65c. for each ticket was cheap enough, and bear in mind also that one gets thrown into the bargain enough dust during the journey to set up a separate scavenging department.

On the way to Talca we passed through the best part of Chile we had thus far seen,—less savage, less virgin, fields of wheat, maize and vines, all looking in first-class condition, and though many of the shanties we passed were of the mud and bramble type, there was an air of industry and well-being as well as progress, all around. Just before arriving at our destination we were favoured with a splendid view of the Andes—about fifty miles distant—with their snow-clad peaks touching the sky. The distance apparently made little difference in the height effect.

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Talca we found to be a large town, having some 20,000 inhabitants, clean streets, fine churches, hotels, a handsome plaza and a tramway sytem. It carries on a fairly large trade in agricultural products, wine, etc., and has several important flour mills. The trams are conducted by females, as in Valparaiso. There were numerous horsemen about, and they made the place look picturesque, in their many coloured ponchos and their other trappings, not forgetting their huge spurs. As we were going to Santiago on the following day, we proceeded to make enquiries at the station respecting the trains. Whilst doing so, one of our party hearing a man near him speaking English, asked him a question or two. 'Oh!' said he, whom we now recognised as one of the three Germans who had followed us from Constitucion, 'you are the 'Gringos' who ran away with our trolley car and ate our breakfast. What have you got to say for yourselves?' We certainly felt somewhat awkward at being denounced in this fashion, but we explained that it was all a mistake, which was the fact, and the matter ended in a good laugh, though we had had the best of it. It seems our messenger for a trolley did not arrive until after we had left on that prepared for the Germans, who were in some way connected with the railway and were expected.

The distance from Talca to Santiago is 150 miles, and the railway fare, including $2 for the special saloon, only came to $10.25 at 1s. 5d. per $.

The journey from Talca to Santiago was very agreeable. Now we were dashing along the side of

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the Lontué River, now across the Mapocho on a temporary bridge, the original, together with a number of others, having been washed away during the winter floods, causing great loss of life. Again we were speeding through beautiful fields of wheat and barley —quite reminiscent of home—and then through vineyards similar to those in France, promising a rich harvest of fine grapes. Now we were wending through groves of poplar trees, and ever and anon stopping at wayside stations just long enough to give a chance to the itinerant vendors of peaches, olives, strawberries, cherries and cakes. The country as a whole looked splendid, but the dwellings of the workpeople were most uninviting. Simply mud hovels with the customary mud beehive outside for culinary purposes, and the inhabitants were often seen seated on the dust heaps taking a meal beneath the sun shelter of a few branches.

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CHAPTER XXII.

SANTIAGO. EARTHQUAKES. TIDAL WAVES. COQUIMBO. LA SERENA. HUASOS. GUAYACAN. COPPER ORES. COPPER STATISTICS. Etc. HUASCO. THE TRAVELLING IRISHMAN. CARRIZAL BAJO. CALDERA. COPIAPO. CHANARAL. TALTAL. ANTOFAGASTA. SEALS AND PELICANS.

SANTIAGO, the capital of Chile, has a population of about 340,000 inhabitants, and was founded by Pedro de Valdivia, in 1540. By rail, and there are two trains daily, it is 115 miles from Valparaiso, though, as the crow flies, only half that distance.

Leaving Santiago, we traverse the beautiful and well-cultivated valley in which it stands, and look out, on either side, on the vast Cordilleras which tower up into the sky, radiant in the hues and shades of colour which the conspiracy of distance, glowing sunlight, and adjacent foliage set up. A poet's land, and if ever we felt any appreciation of Marie Corelli's adulation of the poet's art in 'Ardath,'—her reply to the cold, harsh criticism with which poetry is received in these purely commercial and matter-of-fact days,—it was then. Truly the scene was splendid. Gaining the mountains, we wend through tortuous passes and attain a height of 4,300 feet; and after crossing the deepest 'quebrada' in Chile, by way of the famous 'Maquis' bridge (curved in design and renowned amongst railway engineering feats for its bold and clever construction), we reach level ground once more, and travel along the Quillota valley—one vast garden—

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via Limache, Quilpué, El Salto, and Vina del Mar to the chief port of the Republic. We must, however, return to Santiago and take a look at the city, with

CERRO SANTA LUCIA.

its numerous spires and beautiful Cerro (Mount) Santa Lucia, before we resume our journey from Valparaiso to the north.

Santiago stands about 1,740 feet above the level of the ocean. It is a splendid city, with most of the houses built after the Spanish fashion (chiefly in one storey), on account of the numerous 'temblores,' or earthquakes, which visit the country. As if to impress the fact upon us, the morning after our arrival, and whilst writing our first impressions of the city, the table commenced to rock, and a low rumbling or

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rushing noise was heard. The 'Chilian Times' next day had the following announcement:—'At 9.45 a.m., on Sunday, a violent and prolonged earthquake shock was felt in the district, causing considerable alarm in some of the churches. The oscillations lasted nearly half a minute.' Fortunately the movement of the earth was regular and in the same direction, so that no great damage or loss of life occurred. It was our seismic baptism, and it took us by surprise, as earthquakes usually do, though at the time we did not think much of it. We were, however, very soon to be shaken into more serious views of these disturbances.

To see the people of Santiago, one must visit the Alameda—which is about five miles long—in the afternoon, or the Plaza in the evening after dinner. No one can fail to be charmed with the Alameda, lined on either side with fine poplars, acacias, and other trees and shrubs, and ornamented with the statues of the country's heroes and patriots. At four in the afternoon it is resplendent with magnificent equipages and their gaily dressed occupants. It is the Hyde Park of Santiago. There is a constant

O'HIGGINS STATUE, SANTIAGO.

NOTE.—It has not been thought necessary to insert details of the terrible and most disastrous earthquake which occurred at Valparaiso, on the 16th August, 1906.

stream of riders, and carriages drawn by splendid horses, and, in places, the carriages are pulled up to one side, in order that the ladies may see and salute their friends as they pass by.

The Plaza after dinner is also a blaze of life and colour, being the resort of youth, beauty, and elegance.

SANTIAGO—PLAZA.

An excellent view is obtained of the snow-capped Andes, and the adjoining country, from the racecourse, which is said to be the best situated in the world. The best view of the city is, however, obtained from Santa Lucia Hill.

There are many handsome buildings, some of

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which are of modern construction. The interiors, however, are all on the old Moorish plan, with central court or 'patio,' from which the surrounding apartments are entered. The 'patio' is usually a sight worth seeing, as the natives love flowers and plants, and great care and pride is taken in its decoration. The Chilians of the better class, we should certainly say, are very house-proud and artistic, and, where money is no object, do not fail to beautify their homes with rich and valuable furnishings. The 'Cerro' has been transformed into a beautiful garden, with lake and fountains and handsome terraces leading to the old Spanish fortifications and summit. There is a church or chapel, a 'look-out,' and a restaurant on the Cerro, the last-named being a favourite resort for dinner parties. The fort has a history, as in the early days the Spaniards held it for six years against the Indians. Prior to its conversion into a garden, the natives were gradually cutting away the rock for building purposes until stopped by an Irishman, McKenna by name, who, seeing its natural beauty, commenced a subscription for the formation of the existing garden by a handsome contribution. A splendid view is obtained from the 'look-out' of the great Maipu plains,—the scene of one of Chile's greatest battles. Santiago has also a fine zoological garden and a beautiful park, the latter being the gift of Madame Cousino. The public buildings, such as the Intendencia, town hall, and the cathedral and churches are worth seeing, and the city altogether impressed us as excellent in its arrangement and appointments.

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The journey back to Valparaiso occupied four and a half hours. About three o'clock in the morning after our arrival, we were startled out of our sleep by a noise like the rumbling of thunder, the flapping of all the bedroom hangings, the shaking of the bed, and the howling of innumerable dogs. Our first impression was that someone had burst open the bedroom door—which looked on to the street,—but finding the door closed, and the hangings in the room shaking, we concluded that we had experienced a very severe earthquake. A few hours later, when we reached the town, we found everyone talking of the violence of the shock, which was said to be the worst experienced for many years, though it lasted only for seven seconds. The shock was felt in more or less degree all over the country, and actual disaster was recorded in certain parts. Fortunately the earthquake was not accompanied by any appreciable disturbance of the sea. This frequently happens in South America, and several very serious incursions of the sea are on record. On October 28th, 1724, Lima was destroyed by an earthquake, and on the evening of that day the sea rose in a wave eighty feet over Callao. Out of 23 ships in the harbour, 19 were sunk and the other four were carried inland. In 1746 Callao and Lima were again destroyed, and on this occasion the sea first drew back, and then came on as huge waves a few minutes after the earthquake. This seems to have been a year for earthquakes, as between the end of October and the February following, two hundred and fifty-one shocks were counted. At Caldera, near to Copiapo, on May

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9th, 1877, which was the time when Iquique was devastated, the sea was observed to recede for over 200 feet, after which it rose as a wave over five feet in height. At some places the water came in waves from 20 to 80 feet in height. Milne, from whose book on earthquakes these records are taken, also states that before the disturbances of 1822 and 1835, which shook Chile, immense flocks of sea birds flew inland, as if they had been alarmed by the commencement of some sub-oceanic disturbance. Before this last shock, it is also related that all the dogs escaped from the city of Talcahuano. Animals, it would seem, have an instinctive knowledge of approaching danger, which they shew principally by their restlessness. The more earthquakes one experiences, the more one learns to dread them. It is as Professor Darwin writes:—'A bad earthquake at once destroys our oldest associations; the earth, the very emblem of solidity, has moved beneath our feet like a thin crust over a fluid. One second of time has created in the mind a strange idea of insecurity, which hours of reflection would not have produced.'

We left Valparaiso by the P.S.N.Co.'s s.s. 'Mendoza' on the 22nd December, with a large number of passengers, and one part of the steamer taken up entirely by deck traders, whilst the main deck was full of cattle. We were going to pass along the arid coast of northern Chile, and the steamer, as previously indicated, forms the travelling market.

The distance from Valparaiso to Coquimbo, our first port of call, is 209 miles, and we arrived there

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on the following afternoon. We went on shore at Coquimbo, passing alongside H.M. store ship 'Liffey,' which is stationed in the port, but which, we understand, is soon to be dismantled. We arrived too late

COQUIMBO.

for church, but learned from one of the bluejackets that a great display was made at the service, of officers and men. 'The parson,' he said, gave out the hymn, 'We are but strangers here,' etc., and one of the sailors was heard to remark, 'Thank God we are in this 'ere place.' Coquimbo is certainly not a very inviting place to reside in, though it is an important port, and a good business is done at it. The bay is seven miles across, north and south, and the inner shore is three miles from the entrance. There is a convenient mole

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and a wharf for loading and unloading copper. The town was founded by Valdivia in 1544, and it has about 6,000 inhabitants, who are chiefly occupied in the smelting of copper and the export of metals—gold, silver, copper, cobalt, quicksilver, argentiferous lead, manganese, lead and iron being largely produced in the adjoining districts. Large quantities of skins and agricultural produce are also exported annually. The work of the port is done by manual labour, and the average quantity of cargo, metals, coal, etc., handled per ordinary working day is 1,000 tons. In addition to the mole and pier mentioned, there is a pier at the railway station, for cargo purposes, with three fathoms of water alongside at low tide. The rise and fall of water in the port is from 3½ to 4 feet; and there are about seventy launches, varying in capacity from 50 to 500 tons. The Government railway (Coquimbo and Serena Railway) possesses a factory where repairs to machinery of a moderate nature can be effected.

We took the train for La Serena, about five miles distant, on the opposite side of the bay, as the heavy surf there makes landing very difficult, in fact impracticable, except for 'balsas.' La Serena has about 20,000 inhabitants, and is one of the oldest Spanish towns in Chile. We were somewhat disappointed with its appearance, though interested, as it was literally alive with 'huasos'—wild looking men from the interior, wearing bright coloured ponchos, and riding gaily caparisoned horses. Each man carried a lasso, and wore the huge spurs commonly used in Chile. One of the recent earthquakes,

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we found, had been more severely felt in La Serena than in Valparaiso, as quite a quantity of crockery had been broken. One man's library was tumbled on to the floor, and a young Englishman, who was being shaved by a barber, and who did not run into the street with the rest of the customers, was dragged by the barber, chair and all, into the middle of the road.

Serena is justly proud of its fine cathedral, and it also contains several buildings of note, with the usual plaza, etc.

On our return to Coquimbo we took the tramway to Guayacan, about three-quarters of a mile distant, to see its large copper smelting works, and were shewn everything of interest, and obtained some excellent specimens of ores, copper moss, etc. The works are possibly not quite as fine as those at Lota or at Antofagasta, which we visited later, and which undoubtedly are the largest anywhere on the west coast. The output of bar copper at Guayacan is about 1,200 tons per month.

Another minor port—Tongoy—which we passed, about 27 miles south of Guayacan, is also devoted to the copper industry, and produces some 300 tons monthly.

Chile being so rich in metals, we can hardly pass the subject without recording a few facts respecting them, though the chief mineral product of Chile—nitrate of soda—is not metallic. A remarkable form of native copper found in Chile is the copper sand, or barilla, which consists of grains of metallic copper

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mixed with quartz. The purest copper in the world is found on Lake Superior, but there are mines in Chile which are so pure, and the cost of working them consequently so great, that they have been abandoned.

We succeeded in getting specimens of the following copper ores, and which represent the principal kinds found on the west coast:—

Black Oxide (Tenorite).
Indigo Copper (dark blue colour).
Copper Pyrites or Yellow Copper Ore (the most abundant of copper ores. It is a fine brass yellow in colour).
Peacock Copper (characterised by the most beautiful iridescent colours).
Grey Copper Ore (one of the most abundant and important ores—silver is often present in sufficient quantities to pay for its extraction.)

The three last-named ores contain copper in combination with sulphur. The principal mines of Chile are situated in the provinces of Atacama, Coquimbo and Aconcagua. Copper found in a native state has, I understand, a branch-like appearance; it is one of the oldest known metals, and being malleable, ductile and tenacious, is of great service. Next to silver it is the best known conductor of electricity, and with the large development which has taken and is taking place in the uses of electricity, the demand for it must increase. The building of iron vessels instead of the old-fashioned copper-fastened wooden ships, and those sheathed with copper and yellow metal, decreased the demand for that purpose, but this decrease has been more than made up by increased

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demands in other directions. The brilliant colour and the polish which copper takes is bringing it more into use for ornaments, furniture, etc.

It is shipped in bars, ore and regulus or 'ejes,' from the west coast, but there is a disposition to produce more bars than formerly.

The exports of copper from Chile during 1881 amounted to 38,030 tons, and in 1882 to 42,960 tons. Of the total amount exported from Chile during 1882, 84 per cent. was in a metallic state, 14 was regulus, and 2 ore. In 1893 the total quantity of fine metal exported was 23,033 tons, and in 1894 23,197 tons. Of the latter 84 per cent. was as metal, 12 per cent. as ore, and 4 per cent. as regulus. In 1901 the quantities were 26,347 tons fine metal, 4531 tons ore, 3112 tons matté.

The latest official statistics published are for the year 1900, and as these are interesting as shewing the ports of shipment, destination and value, as well as the quantity, I reproduce them :—

Destination.	Port of Shipment.	Fine Copper Contents. Kilos.	Value $.
Great Britain	Valparaiso	461,841	406,419
	Iquique	26,195	23,052
	Antofagasta	720,254	633,824
	Caldera	2,791,037	2,456,112
	Carrizal Bajo	480,562	422,894
	Coquimbo	8,692,714	7,649,588
	Lota	3,171,834	2,791,213
France	Valparaiso	678,546	597,120
	Coquimbo	305,130	268,514
	Lota	2,269,000	1,996,720

NOTE.—Chile exported 29,165 tons of copper in 1905.

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Destination.	Port of Shipment.	Fine Copper Contents. Kilos.	Value $.
Germany	Valparaiso	77,923	68,572
	Coquimbo	230,624	202,949
	Lota	432,500	380,600
Peru	Valparaiso	1,800	1,623
	Total	20,340,000	17,899,200 @ 16½d.
	Tons	= 20,020	= £1,230,570

The total quantity shipped to Great Britain was 16,344,437 kilos. as against 3,252,676 to France, 741,047 to Germany, and 1,800 to Peru.

The smelting of copper is, experts say, more complex than that of iron, on account of the greater variety of ores to be dealt with. 'The object of the copper smelter,' says J. A. Phillips, in his 'Treatise on Ores,' 'is usually so to mix and treat his ores that he may obtain first, a nearly pure sulphide of copper, separated as far as may be from the various other substances accompanying it in nature, and then to recover from this an impure or crude metallic copper, which is afterwards refined.' Copper regulus is called fine metal to distinguish it from the coarse; the 'ejes' may contain from 60 to 80 per cent. of copper. I cannot attempt to describe the process of smelting as shewn to me, but there is no doubt that the introduction of modern methods has effected a great saving of time and labour. Ore may now go through the whole process, and be shipped as bars of copper in two days as against several months formerly, though the bars, at time of shipment, sometimes in my own experience have been too hot to handle.

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According to the 'Encyclopedia Britannica,' the United States makes 60 per cent. of the world's total of copper. The world's production in 1850 was 52,400 tons—it is now ten times greater. In 1899 the figures were :—

United States - - - -	262,206	tons
Spain and Portugal - -	53,720	,,
Japan - - - - -	27,560	,,
Chile - - - - -	25,000	,,
Germany - - - - -	23,460	,,
Australia - - - - -	30,750	,,
Mexico - - - - -	19,335	,,
Producers under 10,000 tons -	44,835	,,
	486,866	,,

It is now a rare thing for Chile bar copper to be consigned to this country for sale, and practically the whole Chilian production is sold by cable to European and American buyers direct from Valparaiso. The sales are made according to the rules and regulations of the London Metal Exchange, and unless specially mentioned at the time of purchase or sale, the copper must be in the standard known as good merchantable brands. 'Rough' is the term used for unrefined, and 'raw' for refined copper. The conditions as to assaying, discounts, mode of weighing, etc., are all regulated by the London Metal Exchange, and the standards for 'rough' and 'raw' copper are respectively 96 and 99 per cent. In the first case the copper is a valid tender if it does not fall beneath 93 per cent., but an allowance has to be made in the price, according to a fixed scale, for the difference between 93 and 96 per cent. Raw

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copper is not a valid tender if it falls beneath the standard. To facilitate business in copper, warrants are issued by the wharfinger or owner of the warehouse in which the copper is stored, usually for 25 tons each in the case of rough and 5 tons each for raw copper, and under the instructions of the owners. Speculators in copper buy these warrants, and are liable for the rent of the copper from date of purchase to re-sale.

The total visible supply of copper in England and France, on the 3rd of January, 1903, was 16,540 tons. The imports of copper into England and France during 1902 were :—

From Chile and Bolivia - -	28,844	tons fine copper.
From United States of America-	75,847	,, ,,
From other sources - - -	91,770	,, ,,

Copper fluctuates very much in price, and at the end of 1902 it was quoted at £52 7s. 6d. per ton for cash, and at £52 13s. cash in three months. The price at the end of 1900 was £72 17s. 6d. per ton, and at the close of 1901 £49.

Great Britain is the largest copper consumer in the world, its percentage being 32·1, the United States 27·7, Germany 16·1, and France 9·7.

From Coquimbo we steamed to Huasco, about 99 miles distant, arriving there on the morning of the 24th December. It is a small and desolate looking port, situated at the mouth of the Huasco river, and in a fertile valley yielding all kinds of agricultural produce, including the white raisins, which are considered the finest in the world. Quite a number of itinerate traders come on board, and an Irishman, who was

NOTE.—In 1906 the price of copper (electrotypic) averaged £89 per ton.

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amongst the passengers, was overheard to say, 'These furriners, be jabers, are an ignorant lot, for I've travelled on this coast for 25 years and they hav'nt larnt to spake English yet!' I suppose, though I really don't know, that he couldn't speak Spanish! He proved to be very lively at dinner in the evening, and spoke eloquently (it being Christmas Eve) of the cardinal virtues—prudence, justice, fortitude, and temperance, and it is just, though perhaps not prudent, to say that it required a good deal of fortitude to endure what he was pleased to denominate 'timperance,' as he awoke fully to the fact that Christmas required keeping up, even on board ship. It was, we felt, somewhat of a hardship to be separated from our families on Christmas Eve, and we were in sympathy with Dante's lines when we heard the vesper bells at Caldera :—

> 'Now was the hour that wakens fond desire
> In men at sea, and melts their thoughtful heart,
> Who in the morn have bid sweet friends farewell:
> And pilgrim newly on his road with love
> Thrills, if he hear the vesper bell from far,
> That seems to mourn for the expiring day.'

Huasco being a minor port, only 'nationalised' goods and country produce are received. It exports gold (bar), silver (bar and ores), copper (bar and ores), iron ores, algarrobilla, barley and hay, raisins, figs, peaches (dried), olives, chinchilla skins, wines, pisco (a spirit), chicha (a liquor), and cattle. Cargo is landed and shipped in lighters, and the quantity exported in 1899 was 9,200 tons; that imported being 10,800 tons.

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On the way from Huasco we passed the small port of Carrizal Bajo, an outlet for the productive mineral districts of the interior. The principal exports are copper and manganese ores, from 2,000 to 3,000 tons of the latter being produced monthly. We arrived at Caldera, which is 198 miles from Huasco, too late on Christmas Eve to go on shore, though the town, which has a population of about 2,100, was lighted up, and some festivites were in progress. Caldera is situated in a fine bay, and is connected by rail with Copiapo (fifty miles distant), the chief town in the province, and one of the principal mining centres of Chile.

There are two piers at Caldera—one the property of the Copiapo Railway Company, and the other is the Fiscal Mole. The depth of water inside the railway mole is four fathoms, outside two-and-a-half fathoms, and the rise and fall of tide is 3 feet 8 inches. Gold, silver and copper form the exports.

Cargo is landed in launches of 20 tons capacity. Caldera, like all the towns on the coast in this district, seems to have been built in a desert.

Our next port of call, early on Christmas morning, was Chañaral (47 miles from Caldera), but here again we were not able to go ashore, our stay being very limited. It has about 3,000 inhabitants, and is situated on the edge of the Desert of Atacama. The bay is large and well sheltered; and about 300 tons of cargo can be handled per day. There are two piers, with only six feet of water alongside, and the Government purposes building an iron mole. The exports are copper, silver, gold, iron ores, chinchilla skins, salt,

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etc., and the cargo handled at the port in 1899 was about 35,000 tons.

At 9 a.m. we got under weigh for Taltal, some 65 miles distant, and anchored there about 3 p.m. We landed and inspected the town, which has about 4,000 inhabitants, and is situated in a sandy plain surrounded by high mountains altogether devoid of vegetation. Taltal owes its importance solely to the mining and nitrate industries of the adjoining country. The bay being well sheltered, is at all times smooth where vessels anchor, but during certain periods of the year, and generally from November to the end of March, at the beginning of each month, heavy surf prevails near the shore which prevents the loading and unloading of launches on the beach as well as at the piers (two). The surf, however, seldom lasts longer than four days at any one time. The mean rise and fall of tide is about five feet. From 1,700 to 1,800 tons of cargo can be handled in a day, and there are for this purpose about forty wooden launches. The exports in 1899 were nitrate of soda 89,120 tons, and copper ores 5,227 tons. The principal articles of import are provisions for the consumption of the department, and hay and barley in large quantities for provender, the country being completely sterile.

We saw some evidences of Christmas whilst on shore, as all the British children in the town—about 23—were invited to the railway manager's house to make merry and receive presents from an admirably dressed Christmas tree.

Nothing of special interest occurred after leaving

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Taltal, excepting perhaps that one of the native passengers who belonged to the 'timperance' party, and only drank champagne, got rather excited, and to make himself imagine he was getting his Christmas dinner at home, he commenced imitating one of his children calling out 'Papa.' He kept this up, however, to such an extent that everyone was glad to leave the saloon in his charge.

Next morning we anchored at Antofagasta, and spent a most interesting time at that port inspecting the Playa Blanca (Cia Huanchaca) Copper and Silver Smelting Works, and the Antofagasta Nitrate Oficina. We were shewn everything, from the crude ore to the bars of metal in the one case, and from the 'caliche' to the nitrate and salt in the other. Antofagasta is a strong surf port with a high sea, and landing in a small boat seemed somewhat dangerous. We all got rather wet during the process, but were much amused watching the sea lions and seals driving a shoal of fish inshore. The seals bobbed up and down around our boat, sometimes startling us with a snort, and again, as they dived beneath it, making us feel anxious as to what might happen. The harbour was alive also with pelicans hungry for a meal, and it was quite instructive watching them diving in turns (apparently) from the rocks for fish. Sometimes they would fly into the air, fold their wings, and dive from a great height, but they never missed the fish. These they brought up in the bag attached to their bill, and then, as they rose from the water, it was quite easy to see the fish being swallowed.

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Antofagasta is 111 miles north of Taltal, and practically gets all its supplies by sea. It was formerly the chief port of Bolivia, but at the termination of the late war was ceded to Chile. It is connected with Oruro—570 miles distant—by a narrow gauge railway (two feet six inches).

About 2,000 tons of cargo can be handled in a day, by means of wooden launches of from 25 to 35 tons capacity, of which there is a good supply. The exports consist of copper and silver ores from the famous mines of Huanchaca, borax, bar silver, bar lead, copper regulus, nitrate, salt and sulphur. The Bolivian produce shipped at the port includes tin and silver ores, bar tin, silver, dry hides, goat skins, matico, and coca leaves, quina, indiarubber, wool, bismuth, sulphides of silver, chinchilla and moscado skins and borax in small quantities. There are four piers, but these are suitable only for working launches, and the quantity of cargo handled in and out during twelve months is about 600,000 tons. The port requires to be approached with great caution as there are numerous detached rocks off the roads.

Of recent years, great difficulty has been experienced in handling cargoes at Antofagasta, owing to imperfect Customs facilities; but now that Mejillones—54 miles north of Antofagasta—is being opened up, and is likewise connected with the Antofagasta Railway system, it is expected that the difficulty will disappear. The Pacific Steam Navigation Co. is building a Mole at Mejillones, and when the port is habilitated it should afford great relief to Antofagasta.

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CHAPTER XXIII.

GATICO. BOLIVIA. WANT OF BRITISH REPRESENTATION. LA PAZ. BOLIVIAN RESOURCES. TRADE STATISTICS. PORT WANTED. INCA EMPIRE. NORTH AND SOUTH ROUTE OF CONTINENTAL TRAFFIC. LAKE TITICACA. COBIJA. TOCOPILLA—EXPORTS. IQUIQUE—TOWN, TRADE AND PORT FACILITIES. PAMPA OF TAMARUGAL. JOURNEY FROM IQUIQUE TO CALETA BUENA ACROSS THE PAMPA. AGUA SANTA OFICINA. NITRATE OF SODA. IODINE—PROCESS OF MANUFACTURE. CALETA BUENA INCLINED PLANE. NITRATE STATISTICS. COMBINATION AND PRICES. USES OF NITRATE.

LEAVING Antofagasta we called at the small port of Gatico, which is close to Cobija, but were unable to land. Cobija used to be the port for Bolivia, but the business has been attracted to Antofagasta by the railway. The Germans who travelled with us through the Smyth Channel could scarcely speak of anything but Bolivia, a Republic, which, in their estimation, offered the greatest inducements in South America for young men seeking fortune. Strange to say, although the trade with Bolivia (which, prior to 1825, was Upper Peru) is increasing, and the country is rich in ores, there is no resident British representative there. This was not so at one time, and stories are rife as to the reason which caused Great Britain to take umbrage and to cross the Republic off the list of those to which it sends representatives. We have nothing to do with these stories, and in any case, as they are told, they do not reflect credit upon our nation; but, whatever may have been the cause of the severance of 1853, we do think that the time has come when we should no longer stand aloof, but should play an acknowledged

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part in the expansion of Bolivia's trade. In 1864 there was a British Consul at Cobija, but he was withdrawn after a brief interval, and since then we have had no real representation. In 1895, Mr. Alfred St. John was appointed to inquire into the question, and he reported in favour of renewed relationships, and suggested that the diplomatic representation of Great Britain should be entrusted to the British Minister in Peru, aided by the appointment of unpaid Consuls at convenient points in Bolivia. He furnished the names of British residents qualified and willing to act in this capacity, and there is, we understand, no lack of eligible men in La Paz and elsewhere quite willing to undertake the responsibilities, and competent to discharge the duties of Consuls in the interest of the old country. On April 11th, 1901, the 'Morning Post' had an article on the subject which concluded as follows:—'It appears to be high time that something was done towards placing this country more on a level with its competitors abroad by an increase of intelligent vigilance on the part of the Foreign Office, and a first step in this most necessary reform would be to resume and regularise our relations with Bolivia.' We are glad to notice while this chapter is going through the press that it is publicly announced that 'The King has been pleased to accredit Mr. William Nelthorpe Beauclerk, Minister Resident and Consul-General *in Peru and Ecuador,* to be representative also in Bolivia in the same capacity.' This is undoubtedly a step in the right direction, to be followed, let us hope, by the appointment of a resident Consul. The Republic

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contains about 597,000 square miles, and is naturally divided into two districts, the Sierra, or high country to the westward, and the Montaña, the great plain and tropical region of the east. The department of La Paz, which stands at an elevation of 12,250 feet above the sea level, contains some of the tallest peaks on the American continent, and Lake Titicaca—half of which belongs to Bolivia and half to Peru—is the most elevated sheet of fresh water in the world. Titicaca and the city of La Paz are connected with the Peruvian port of Mollendo via Arequipa, but unfortunately, when visiting Arequipa, the train service did not fit in with our arrangements in such wise as to permit of our going to these most interesting places. An anonymous writer on the subject of Bolivia says :—'The highlands of Bolivia have been compared with Thibet, the roof of the world : but whilst the Asian tableland consists merely of mountain pastures, that of South America supports towns and populous cities, and affords food for numerous herds of cattle, llamas, vicuñas and sheep, and is covered with harvests of cereals. The mineral wealth of Bolivia lies

PERUVIAN INDIANS.

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principally in the western districts, which are consequently the most populous and settled, containing the chief centres of trade at La Paz, Cochabamba, Sucre, Potosi and Oruro. The eastern provinces of Beni and Santa Cruz cannot as yet point to more than their potentialities, which are vividly suggested in the description of a traveller from the

NATIVES OF BOLIVIA.

United States, that the few scattered inhabitants gaze upon a wealth sufficient to pay the national debts of the world.' The population all told is about two-and-a-half millions. There is plenty of indiarubber in the forest districts of Acre, Beni, La Paz and Santa Cruz, and the country is rich in minerals of all kinds. In the temperate and tropical zones everything can be grown, and there are some 6,000,000 trees in cultivation, from which the well-known Peruvian bark is obtained.

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The trade is principally in the hands of Germany and England, and the following figures will show how the imports and exports are divided between these countries :—

IMPORTS.

	1889.	1900.
From Great Britain -	£186,854 = 26 °/₀ of the whole.	£226,534 = 17 °/₀ of the whole.
From Germany - -	128,377 = 18 °/₀ of the whole.	310,952 = 23 °/₀ of the whole.

EXPORTS.

	1888.	1898.
To Great Britain -	£140,832	£110,060
To Germany - -	88,511	196,050

CATHEDRAL AT PUNO.

Recently Germany and France have appointed 'Consules Ambulantes," or travelling Consuls, who

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go through the country finding out exactly what the people require, and what they have to dispose of. Great Britain should act similarly.

RUINS OF INCA MONUMENT, CUZCO.

Bolivia, however, wants a port of its own, and it is to be hoped that the near future, through some friendly and diplomatic arrangement, will record that Chile—Peruvian protests being withdrawn—has finally conceded the strip of land to the port of Mejillones del Norte, alluded to in the treaty of 1895, which will form a

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high road for the ready development and progress of this great country. A territorial transfer of great importance has, we understand, recently taken place between Bolivia and Brazil, by which the latter has ceded to the former State a large area of valuable country. The rivers which the treaty with Brazil incorporates into Brazil are the Acre and Yacu and their affluents, the Upper Purus and Upper Jura and their affluents. This new district is rich in rubber, and the Bolivian Government has, it is said, decided to subsidise a line of steamers to ply between European ports and Para, and will no doubt send the produce to Para by a native company. One cannot write about any of these South American Republics without being reminded of the splendid empire which was once dominated by the Incas, and which extended from Quito, the capital of Ecuador, right over the whole Andean region through Peru and Chile, with the exception of the extreme south. 'Roads,' says Clements Markham, and his record is borne out by Prescott, and recently by Dr. Moreno, 'were constructed along the dizzy precipices of the Cordillera and over the sandy deserts, terraced cultivation converted the ravines into hanging gardens, and well conceived systems of irrigation works, both in the mountains and on the coast, turned barren wastes into smiling valleys and rich pastures.'

Sir Martin Conway in his 'Aconcagua and Tierra del Fuego,' says that Dr. Moreno informed him 'that recent geographical investigations, conducted on behalf of the Argentine Government, have revealed the fact that the Uspallata Valley, which joins the Mendoza

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Valley some way below Vacas, is the south end of a long, continuous depression running through no less than 18 degrees of latitude. This depression, interrupted here and there by unimportant passes, rises gradually from the south, becomes the Puna of Atacama, *continues as the high Bolivian Plateau* including the Lake of Titicaca, and stretches on further to the north to the point at which the Cordillera Real joins the main Cordillera of the Andes. *Right along it there ran in the days of the Incas'* dominion, and doubtless for many centuries before, the main north and south route of continental traffic, whereby Cuzco, the capital of the Inca empire, was kept in communication with the southern lands, etc. Where the Uspallata Valley debouches in the Mendoza Valley the long depression reaches its southern termination, and the road was compelled to be deflected to the western side of the watershed. Accordingly it turned up at Mendoza Valley, crossed the Cordillera by the Cumbre, which thus derived the name Uspallata Cumbre, *i.e.*, crest of the Uspallata route, and so gained the fertile valley of Chile, and continued down that to the southernmost regions of human habitude. South of the Rio Mendoza the long depression does not continue on the east side of the main chain, but the great Chilian Valley on the western side begins almost where the other leaves off. The high mountain mass culminating in Aconcagua lies between the south end of the one and the north end of the other, possibly owing its existence to the same telluric forces that determined them. In western South America there can be no other line of north and south communication than this.'

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Lake Titicaca, as we have already hinted, lies across the boundary line separating Peru from Bolivia,

BALSAS ON LAKE TITICACA.

and is situated at an altitude of about 12,250 feet above the sea level. It has an area of over 5,000 square miles. Steamers ply on the lake, and convey passengers from Puno Station to Chililaya, a distance of 90 miles. The native Indians use curiously constructed reed boats. There are plenty of fish in the lake, and good shooting to be had around its margin.

Cobija is an unimportant port, depending for its existence solely upon the mining industry of the vicinity. Copper ores are shipped from it to Lota for smelting purposes. One part of Cobija is in ruins, the result of an earthquake some years ago. Gatico is now more used than Cobija.

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Our next port of call was Tocopilla, which is important as the terminus of the Anglo-Chilian and Nitrate Railway Company's system. There were quantities of ores waiting in the port for shipment, and the separation of the ores is a wonderful business. The sampling and assaying are most interesting operations, and frequently, where some of the miners sell the ore personally, they have, so we were told, to be kept at a distance to prevent them from 'prilling' it. This is another term for falsifying the sample by putting in richer ore dust, which is carried up the sleeve or in the pocket.

The Anglo-Chilian Nitrate Railway Company have a splendid mole, and tap a number of nitrate oficinas and mines in the district. There are also two small private moles at the port, alongside which lighters can be accommodated. The port itself is a surf one, though somewhat sheltered, and the town is a collection of wooden houses surrounded by barren hills and sandy wastes. Copper mining is the principal industry, though nitrate of soda forms the chief article of export. The depth of water alongside the Anglo-Chilian Company's pier is 25 feet; and about 1,600 tons of nitrate can be shipped by that company in a day. The other piers together can deal with about 500 tons per day.

The exports during the year 1900 were :—

Nitrate of soda - - -	170,000 tons.
Borax - - - - -	1,044 ,,
Copper ores - - - -	9,000 ,,
Iodine - - - - -	173,530 lbs.

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There are about 45 wooden launches in the port, ranging from 20 to 30 tons in capacity, and also a small iron tug, the property of the Railway Company.

Leaving Tocopilla we steamed north for Iquique. The night was a brilliant one—the sea being illuminated by innumerable stars. The Milky Way, or as the Frenchman translated it, 'Milk Street,' had all its lamps lit, and we saw the famous cloud of light known as the 'Magellan Cloud,' and formed by the light of thousands of small stars, themselves invisible to the naked eye.

EXMO. SEÑOR DON JERMAN RIESCO, *President of Chile, 1903.*

We arrived at Iquique on the 29th of December, and were surprised to find so fine a city, lighted by electricity and gas, and with a system of tram cars. The town, which is the seat of the Intendente of the province of Tarapaca, is built on a sandy plain, and is entirely shut in landwards by a semi-circular range of hills. There is the customary 'plaza,' or central square, adorned in this case with a monument of the naval hero Don Arturo Prat, also a cathedral, a number of churches, clubs, theatres, etc. The population is now about 33,000. The city has suffered at times by fire, tidal waves, and earthquakes, and the last rain known to have fallen was in 1891. The houses are principally of wood, and they present a very bright appearance, in consequence of the law requiring that they shall be painted once a-year—prior to the 18th September, *i.e.*, the National Independence Day.

There are four banks, viz., the Bank of Tarapaca

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and Argentina, Banco de Chile, Banco Aleman, Transatlantico, Banco Espanol Italiano, and about fifty insurance companies are represented, so that there would seem to be keen competition in that business.

The imports consist of provisions, coal, lumber, machinery for the mines and nitrate works, merchandise of all descriptions, sulphur, gunnies, live stock, etc.; and the exports of nitrate of soda, iodine, sulphates, silver and copper ores, bar silver, borax, hides, etc. All kinds of food and cattle, horses, mules, flour, fruit, etc., are imported from Arica and Southern Chile.

There are three tugs at the port—register tonnage 50, 96, and 122 tons respectively,—and a large number of wooden lighters, ranging in capacity from 18 to 25 tons, and principally owned by Messrs. Lockett, Bros. and Co. There are fifteen moles in the port, all owned, with one exception, by private firms, so that if we look at the moles and the number of launches, we can readily see that a very large quantity of cargo can be handled at the port. Iquique is protected on the south by Cavancha Point and Iquique Island, and on the north by Piedras Point. On surf days, however, the port is a very bad one, as the island is not sufficient to stay the force of the swell, and the sunken rocks between the anchorage and the landing place make boating and landing dangerous.

We left Iquique by the morning train, our intention being to cross the 'Pampa' of Tamarugal, which is about 150 miles long and 50 miles broad, and to travel along it to Caleta Buena, proceeding thence to Pisagua, where we were to join the north-bound steamer, and as

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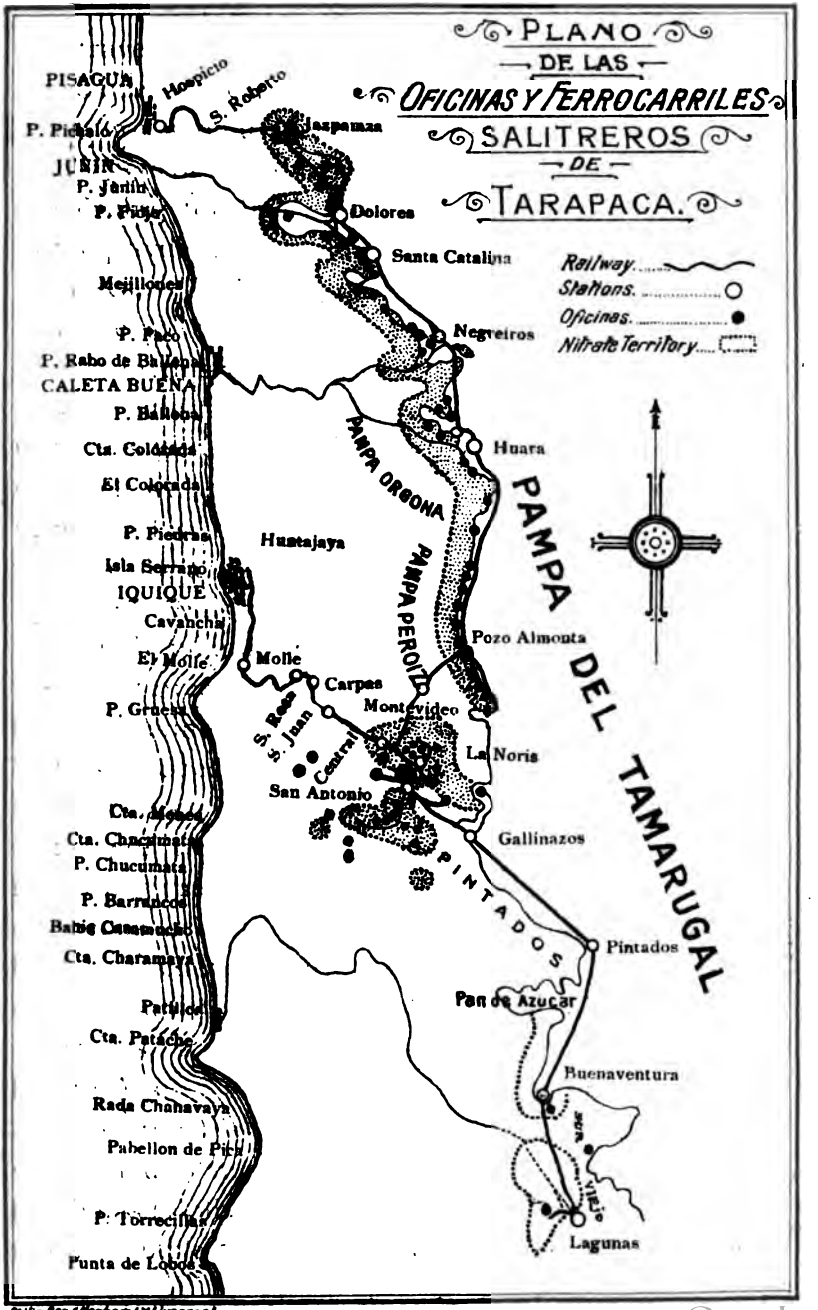

Philip Son & Nephew, Ltd. Liverpool.

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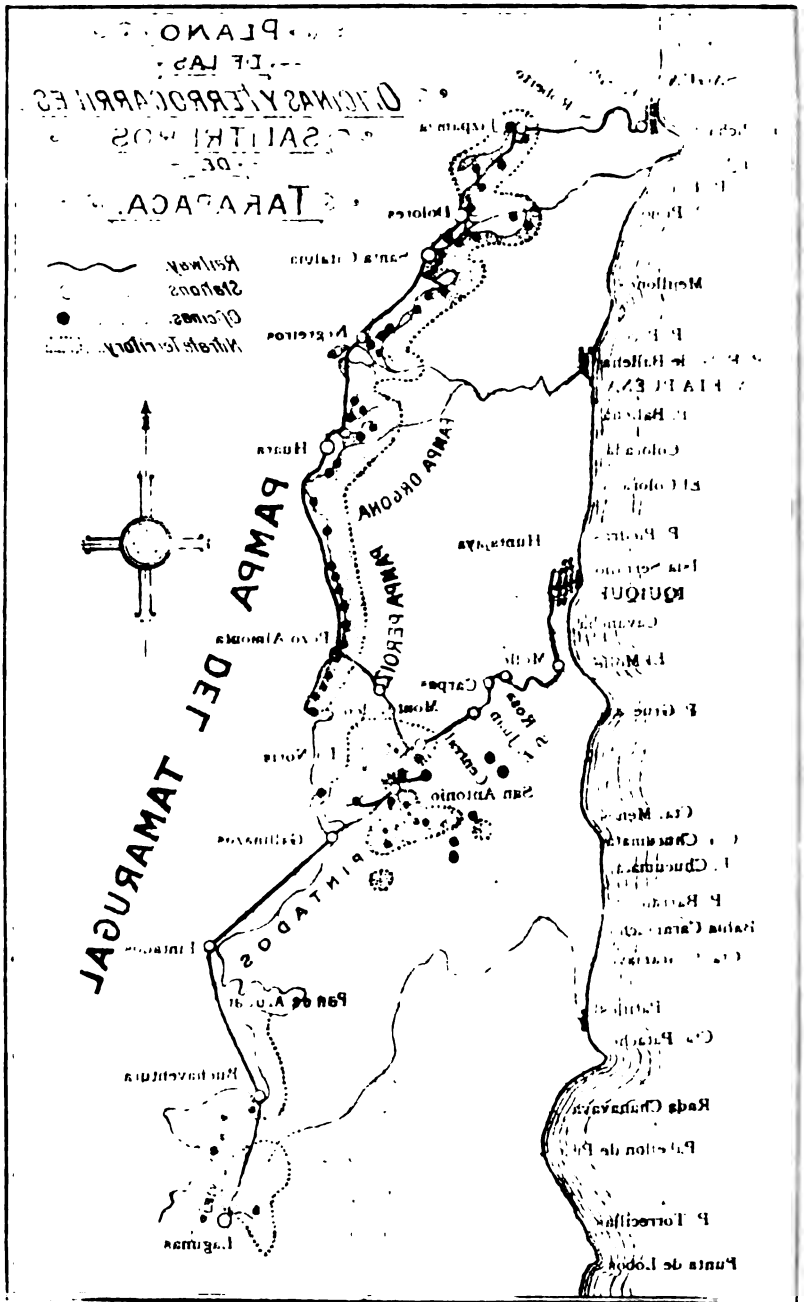

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our travelling companions thought the programme a good one, we carried it out. The 'pampa' and the coast, we should mention, run almost parallel. We held letters of introduction to the managers of several of the leading 'oficinas', and determined to avail ourselves of the privilege of staying for a night at the Agua Santa premises. And it certainly was a privilege and a pleasure to be received with such cordiality, to find friends in this out-of-the-way place, and to be so hospitably entertained. The Christmas and New Year festivities were still in progress, and whilst it might be said that we arrived at the right time, we can vouch for it, from all we heard, that any time is the right one at an 'oficina' for a hearty welcome. The railway line from Iquique ascends some 3,600 feet before getting on to the vast sandy plain known as the 'pampa.' At first not a vestige of green is to be seen, nothing but barren mountains gleaming in the hot sun, and the discomfort caused by this is added to by the clouds of dust which the wind and impetus of the train force into every carriage. Here and there were small mounds with a cross on each indicating the burial place, we were told, of some men or 'peons' who had been killed. Life at one time was held very cheap on the 'pampas,' and there was no serious punishment for crime. Our destination was Negreiros, where we were to join the narrow gauge line to Agua Santa, and we stopped at quite a number of the stations on the way up. At each of these there was a kind of market, principally conducted by Cochabambinas (Bolivian women), and, of course, there was the inevitable refreshment bar. The whole of the

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occupants of the train—and the number was a large one—got out to drink at each station, of course not necessarily strong drinks, though cocktails seemed to be the order of the day. The fact is, the atmosphere was so dry that our lips cracked and our throats became quite sore. Once on the 'pampa' we commenced to pass the nitrate 'oficinas,' which, seen for the first time, are highly interesting. At one part of the journey we caught sight of some trees in the far distance, and we learned on enquiry that there is a little water there which flows down from the snow-capped mountains beyond. As far, however, as the eye could reach there is nothing, with the slight exception named, but sandy desert visible, and here and there the buildings of the oficinas. Now and then a horseman may be seen galloping over the plain, or an Arriero with a train of pack mules. Then we brightened up at observing what we took to be a large lake in the distance, with the mountains and 'oficina' buildings reflected in it, but this we found to be the 'mirage of the desert,' which has gladdened many a weary horseman only to disappoint him. No sooner had we discovered our mistake than another curious sight presented itself in the shape of a corkscrew cloud (rather an appropriate name for this district), which travelled over the plain touching the ground with its fine point, and stretching upwards in zigzag form to an expansive top. This was a whirlwind, and we saw many of them later travelling about from one point to another in fantastic shapes, and carrying a large quantity of sand with them. Fortunately none came

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our way, as we were more than satisfied with the quantity of dust we accumulated. The first impression we got on seeing the nitrate grounds was that the whole place had been thrown up by an earthquake, huge masses of stone and sand being piled up all over the fields. Here and there lying on the hill sides could be seen plenty of salt, but the people for some reason or other do not collect it, preferring to buy what little they require of that article in Iquique. In any case what we saw lying about would not be fit for the table without undergoing some chemical process, as it contains magnesium. It took us from 11 a.m. to 4.30 p.m. to get to Negreiros, and on arrival we were glad to meet the general manager of the Agua Santa Nitrate and Railway Company, and in another twenty minutes we arrived at the 'oficina.' This seemed to us quite a town, there being the houses of the workmen (some 700), a pulperia (general store), market, school, a plaza, in which the manager's house with attached offices is situate, and an extensive corral, enclosing a large number of mules, horses, cattle, and sheep. Of course all food, both for man and beast, has to be brought from Iquique or Caleta Buena. After looking over the works, we settled down for the evening, which was enlivened by music and dancing, and we had the pleasure of witnessing the national Chilian dance known by the name of 'La cueca.' It is a very graceful dance, and the music is of a lively kind, time being kept by the hand-clapping of the whole company.

Next morning we went over a nitrate field, and were shewn how the nitrate is discovered. First, a

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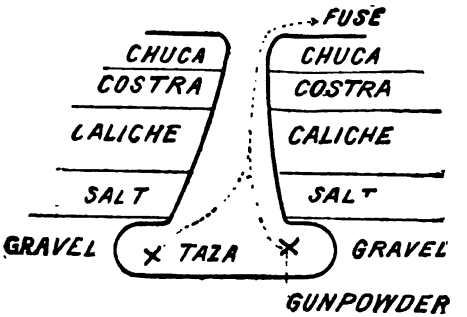
hole is made in the ground with a crowbar, and then a spoon bar is let down, or a boy with a measure to ascertain the thickness of the 'caliche,' or crude nitrate. If nitrate fit to work be found, then operations are commenced. The surface covering of the ground is called 'chuca.' Underneath this is the 'costra' or crust,—next comes the 'caliche,' then salt, and beneath this gravel or 'coba.' The 'caliche' is generally from 3 to 6 feet beneath the surface, and it is got out by blasting. A hole is made after this fashion :—



A boy is let down into the hole with the blasting powder, which he puts into the 'taza,' or cup, as shewn in the sketch. He then attaches a long fuse, which is lighted when he gets to the surface, and then everyone makes for safety. In a few minutes an explosion takes place and tons of material are thrown up into the air, looking in the distance just like one would expect a mud geyser to do. The 'caliche' is then picked out and carted to the works. It is there crushed by machinery and run into boiling tanks, where it remains for from eight to ten hours. This dissolves the 'caliche,'

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and the sand and all insoluble matter (ripio) drops to the bottom of the tank, which is formed with trap doors, through which the tanks are later cleaned of the 'ripio.' The liquid, known as 'caldo,' containing nitrate and salt, is then run off into vats, where it is allowed to crystallise.

Any liquid remaining is run off and forms the mother water, or 'agua vieja,' as it is called, and is used over and over again. The nitrate, after drying on the 'cancha,' is then bagged and sent by rail to the port for shipment. The salt, precipitated, is used by some 'oficinas' and thrown away by others.

Nitrate of soda, up to standard, should not contain less than 95 per cent. of pure matter. The drying process does not remove all the moisture, and there is in consequence some small loss in weight during a long voyage. 'Raw nitrate of soda, spoken of as 'caliche,' says Captain W. M. F. Castle, in his 'Sketch of Iquique,' 'is only found on the south-west coast of America, between the parallel of 20 and 27 degrees S. latitude. It is invariably situated in beds of not less than 2,000 feet above sea level, and from 50 to 90 miles from the coast. It is met with in the thickest layers and of the best quality upon the sides of basins which, in pre-historic times, formed undoubtedly inland seas, or were caused by the subsidence of the ocean. It is a mineral deposit, formed chiefly, it is believed, by decayed animal vegetation and sea weed matter mingled with sea salts. This theory is borne out in some measure by the fact that skins, also skeletons of animals, birds, shells, seabirds' eggs, fish, feathers, and guano are

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found constantly under the caliche some fifteen feet below the surface.'

BONE OF 'MASTODON' FOUND IN CHILE.

Iodine is also made from the 'mother water' by several processes, one of which is the passing of steam, impregnated with sulphur, through it; and it forms an excellent bi-product, yielding a good monetary return. The iodine floats to the top, and has the appearance of mud. This is collected and compressed into cheeses. It is then sublimed in retorts, and appears subsequently in flakes, peacock and grey in colour, and before being used medically has to be mixed with another chemical or spirit.

The whole process of the manufacture of nitrate is extremely interesting and instructive, as are also the numerous appliances for the saving of manual labour.

The 'pulperia' is quite an institution on each 'oficina,' the men being paid in 'fichas,' or tallies,—

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gutta percha discs, with the name of the 'oficina' and value on face,—which are, as a rule, only received as cash at the general store. Any 'fichas' not so spent may be changed into cash when leaving the 'oficina.' It will thus be seen that the store is a profitable institution, and tends in a way to reduce the total amount of wages paid. After inspecting the store, we witnessed a very lively scene caused by the branding of about fifty fresh mules, which had just arrived. The animals seemed to know by instinct what was going to happen as they stampeded in the corral. They were, however, readily lassoed and fastened to a post until after the hot iron had been administered. They squealed and kicked a good deal, but had to submit. Then leaving the 'oficina' by the narrow gauge railway, we made for the Alto, about two hours' journey over the 'Pampa.' From the Alto we descended to Caleta Buena, some 2,400 feet, by means of an inclined plane and on the back of a nitrate truck, as shewn in the illustration. The trip down took a few minutes only, but it was long enough to weaken our knees and make us think of what might happen if the rope broke. After turning the fourth point we seemed to be going down an almost perpendicular wall, and we simply made ourselves part of the truck and held on for dear life. Our fears were, we were told, quite groundless, which we readily admitted, as we had been in mid-air for some time The remark was not, however, meant as a joke, but a prelude to the explanation of the strength and durability of the contrivance. It is certainly a triumph of engineering skill. The loaded truck coming down pulls up the empties from below.

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Before leaving Caleta Buena we must pause awhile to look into the statistics as affecting this most important of Chilian industries, showing how the nitrate is distributed, etc.

DESCENDING FROM THE ALTO TO CALETA BUENA PORT.

On the 30th November, 1902, the visible supply of nitrate of soda was :—

Stocks in Continent - - -	170,690 tons
Stocks in United Kingdom - -	22,140 tons
Quantity afloat to Europe - -	370,000 tons
	562,830 tons

as against

In 1901 - - - - - -	561,040 tons
In 1900 - - - - - -	669,000 tons

and the closing spot quotation was 8s. 9d. to 9s. per cwt.

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At the last Exhibition in Paris the Nitrate Combination had a very instructive exhibit, and the progress of nitrate production was shewn in a very concise form by a pyramid of blocks marked with the year and the quantity produced. These were as follows :—

Year.	Tons.
1830	400
1840	10,100
1850	22,800
1860	52,200
1870	136,287
1880	225,559
1890	1,050,119
1899	1,380,002

The year 1900 shews an excess over 1899 of 1,714,808 Spanish quintals, equal to 77,663 tons.

The quantities exported to Europe in the five years 1897 to 1901 were:—

	Quintals.
1897	20,600,857
1898	24,634,238
1899	26,533,152
1900	26,751,204
1901	26,732,210

During the year 1900 the following quantities of nitrate were exported from the province of Tarapaca:—

	Quintals.	
Iquique	14,201,265	
Caleta Buena	7,985,055	
Junin	1,536,304	
Pisagua	1,635,147	
		25,357,771

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Province of Antofagasta:—

Tocopilla - - - -	3,739,994	
Antofagasta - - -	525,468	
Taltal - - - -	1,926,420	
		6,191,882
		31,549,653

Chile uses from 300/400,000 quintals in a year, and Peru about 8,000 quintals, and a fair quantity is now going to Japan, Ceylon, Africa, Sandwich Islands, Spain, and British Columbia.

It will be interesting now to note the distribution in Europe for the same year, dividing the year into halves, as the consumption in the first division far exceeds that in the second.

Consumption of nitrate in Spanish Quintals.

	1st half of 1900.	2nd half of 1900.
England - - -	1,479,130	715,300
Scotland - - -	567,870	226,090
Ireland - - -	31,050	17,250
Germany - -	7,897,740	2,584,280
France - - -	5,282,410	901,830
Belgium - - -	3,073,260	650,440
Holland - - -	967,840	1,104,230
Italy - - -	438,380	160,540
Austria - - -	14,950	75,900
Switzerland - -	24,380	—
	19,777,010	6,435,860
	26,212,870	

as against 26,732,210 in 1901. In this year the statistics shew that the United Kingdom takes less, and Germany, Belgium, Italy and Switzerland more than

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in 1900. The cultivation of the beet, I understand, accounts for the large consumption of nitrate on the Continent. Spain also commenced to use nitrate in 1901. In 1885 32,000 tons of nitrate were shipped to the United States as against 198,677 tons in 1900.

The export of nitrate adds to the Chilian Exchequer about £1,500,000 per annum.

The owners of all the principal 'oficinas,' over eighty in number, entered into a combination in April 1901, which will remain in force until March 1906. Under this the output of the 'oficinas' is regulated and restricted, each 'oficina' having a fixed quota, and the market is therefore not glutted to the ruination of prices.

The price of the nitrate is reduced if it be found that same does not come up to the standard quality. For instance, if nitrate be purchased per quintal of the 'ley' of 96 per cent. and falls beneath this, the price is reduced three per cent. for each one per cent. below the standard. Even fractions of one per cent. have to be allowed for, the practice being that for each quarter of one per cent., or fraction of a quarter of one per cent. of salt that the nitrate contains in excess of one per cent., the price is reduced one penny. Each quintal must contain 46 kilos of nitrate of soda. The 'ley' is ascertained by agreed chemical analysis.

Nitrate of soda is now proved to be one of the cheapest and most useful of manures. It supplies plant-food of the most concentrated and direct kind, and the objection that it was more of a

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stimulant in its properties than an actual food has now been disposed of. It is excellent for cereals, grasses, and for most vegetables. We think we cannot do better than quote Professor C. G. Freer Thouger's summary of the advantage in farm practice of the use of nitrate:

'1. Nitrate serves directly as food for plants; 'not having to undergo change in the soil, it acts 'more rapidly than nitrogenous manures of organic 'origin, as the action of these latter is dependent 'on their undergoing nitrification.

'2. The rapidity with which the nitrate is 'absorbed by plants quickly puts them in a state 'which, by the vigour of their development, they 'can better resist disease, insect and parasitic 'attacks.

'3. In seasons following a severe winter, nitrate 'broadcasted on wheat in spring enables the autumn 'sowings to repair the lateness caused by climatic 'disadvantages.

'4. Nitrate economically increases in a remark- 'able degree the yield of most of our crops.'

It is estimated that at the present rate of consumption, the Chilian nitrate fields will last about 80 years.

What strikes me as exceedingly inconsistent and anomalous is the great divergence of price at present subsisting between nitrate of soda and its competitor sulphate of ammonia: whereas the former roughly stands at about £9 per ton, the latter commands the high figure of £12 10s.

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Were these quotations reversed they would undoubtedly then more closely approximate a correct estimate of the relative value of the two substances.

The use of sulphate of ammonia by agriculturalists involves a certain degree of speculative risk altogether absent in the case of nitrate of soda. The former requires to undergo decomposition in the soil before it becomes converted into that form necessary for its assimilation by the crops, and as certain physical or climatic conditions are requisite at a given period in order to perfect this change, such as the simultaneous existence of heat and moisture at the proper period, it becomes apparent that a user of this substance runs considerable risk of loss, should his forecast of the weather conditions not be realized. On the other hand, nitrate of soda being immediately available to the crops, its application can be so timed as to ensure the maximum results.

It is therefore difficult to reconcile the present market quotations. Agriculturalists cannot afford to ignore the risk pointed out unless adequate compensation in price can be adduced, whilst here, it is to be observed, the contrary is the case.

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CHAPTER XXIV.

CALETA BUENA. SEALS FISHING. JUNIN. PISAGUA. GUANO SHIPMENTS. ARICA. CURIOUS FISH STORY. ILO. PERU. INCAS. CONQUEST BY PIZARRO. DEATH OF ATAHUALLPA. WEALTH OF PERU. CLIMATE. THE HUMBOLDT CURRENT. ABSENCE OF RAIN. GUANO AND NITRATE DEPOSITS. CHINESE AND JAPANESE LABOUR. SUGAR INDUSTRY. STATISTICS OF PERUVIAN EXPORTS AND IMPORTS. PERUVIAN CORPORATION. CURRENCY. EXPECTED DEVELOPMENT.

WE spent the afternoon in Caleta Buena examining the moles (two) and sheds, and the small town, which has the appearance of being squeezed into the side of the hill, and ready to fall into the sea. Although somewhat confined, the port is a good one, and the working is not much affected by the surf. The bay was a sight to see, as it was literally packed with fish. Coming down from the Alto we noticed, here and there, a large purple-coloured patch in the water, which we took to be either a shoal or the reflection of some object, and we could scarcely believe that each patch was a solid mass of fish. But to see is to believe, and we watched for a time some millions of fish being chased about the bay by numbers of seals. We counted as many as fifty seals in one group. These seemed to be holding a Board meeting, at which their policy was discussed and settled, and a very noisy discussion it was, if we may judge by the snorting. We watched to learn the resolution which had been passed, and had not long to wait. The whole party separated, each taking up a position so as to form a cordon round the shoal of fish, and which, dreading their enemies,

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huddled so closely together that they apparently became a ready prey. Then, as if by concerted action, the seals dived under and came up through the dense mass,

CALETA BUENA.

but did not seem to catch any of the fish, which darted away with the rapidity of lightning. We found out the reason for this later. It seems that underneath the shoal of small fish, and feeding on them, were numbers of large fish, and it was for these the seals were diving. When a seal succeeded in catching a large fish, it came up to the surface to eat it, and it had to be very quick and clever in the process, as there was a flock of pelicans and other large diving birds on the watch, and we

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saw several fish snatched by these birds right out of the jaws of the seals. This had been going on for some time at Caleta Buena, and the seals had quite recently determined on reprisals. As soon, therefore, as a pelican rested on the water, a seal would endeavour to come up underneath it and tear it to pieces.

We stayed for the night as guests of the Agua Santa Company, and were well entertained by the local superintendent. Early next morning we left by the small tug 'Rapido' (kindly placed at our disposal by the company), for Junin and Pisagua. It took us two hours to reach Junin, about ten miles to the north of Caleta Buena. A number of nitrate 'oficinas' ship at this port, which is a good one, notwithstanding the heavy surf, and to facilitate business there is an inclined railway, 2,300 feet to the Alto, the steepest grade being 57°. The port, it is expected, will be largely developed in the near future by means of good moles and a railway from the Alto, across the 'pampa,' to certain of the nitrate 'oficinas.' We stayed but a short time at Junin, there being little to see, and a small tug boat—the 'Assistance'—belonging to the port, was waiting to convey us to Pisagua, a distance of about ten miles. We were to join the s.s. 'Guatemala' that night, *en route* for Mollendo, so we made haste on shore at Pisagua to see and learn all we could in the short time at our disposal. The port is one of the safest on the west coast, being well protected from the south by Pichalo Point, which projects about two miles into the sea. Passengers and cargo can be disembarked at all times without difficulty, and a large quantity of

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cargo can be dealt with, there being 75 launches, ranging in capacity from 20 to 60 tons. There are seven piers in all, viz., one for the use of passengers and general cargo, one for the discharge of coal, and five for the shipment of nitrate.

SURF AT JUNIN.

The average depth of water alongside these moles is ten feet, and there is a rise and fall of tide of from four to five feet. The exports consist chiefly of nitrate, iodine, and guano, whilst the imports may be summarised under the headings of provisions, general merchandise, cattle, barley, hay, coal and bags.

There are no steam tugs in the port, but these can be obtained from Iquique, Caleta Buena, and Junin,—the charge for towage being: between Pisagua and

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Junin £25, £10 extra to Caleta Buena and £20 additional to Iquique.

The guano worked in the neighbourhood is obtained under a concession from the Government which does not admit of its shipment to foreign countries, and as a consequence its extraction is limited. About 10,000 tons, per annum, are sent to Southern Chile.

The Nitrate Railway is connected with Pisagua (which is the most northerly port for the shipment of nitrate), and ascends the hillside by a series of zigzags. The town is built on the water's edge, at the foot of a semi-circular range of hills, 1,200 feet high, shutting it in entirely on the land side. The population is about 5,000.

It was a matter of regret to us that Arica, the northernmost port of Chile, was not on our itinerary,

ARICA.

as we were particularly desirous of seeing the Morro, the scene of one of the most heroic conflicts in the late war between Chile and Peru. The bay, we were told, affords excellent anchorage in six to seven fathoms of

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water, close in, and there is a good iron pier equipped with a steam crane. The population is only about 3,000, the business of the port having been diverted during late years in other directions; but there is evidence that the trade is gradually returning to its former flourishing state. About 700 tons of cargo can be handled per day by means of wooden launches, of which there is a good supply, ranging in capacity from 25 to 40 tons. The exports consist of borate of lime (which comes from the Chilcaya 'pampa,' distant 114 miles), cotton, wool, hides and metals, also salt, sulphur, vegetables and fruits for coast consumption. The town is built at the foot of the Morro, and is surrounded by sand hills. On a clear day Tacna, thirty-nine miles distant, can be readily distinguished, and to the eastward a magnificent view of the Andes is obtained. A railway runs from Arica to Tacna, the capital of the province of that name, and which, with the province of Arica, was taken possession of by Chile at the close of the war, but, subject to a certain provision, both provinces were to revert to Peru after the expiration of twelve years. Tacna has a population of about 8,000 inhabitants, and trades almost entirely with Bolivia, to the southern province of which (Oruro) there is a mule track, and a railway is in project. Some of the finest peaks of the Andes can be seen from Tacna.

Whilst passing the port we were reminded of a story we had heard from one of the Pacific Company's commanders, and which we will now give as nearly as we can in his own language:—'I stopped my ship once

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near Arica,' said the captain, 'noticing about a square mile of grey surface on the sea which might have proved to be a shoal, or new land recently sprung up. Slowly steaming towards it, I saw a curious mass of greyish matter afloat, and not an inch of water visible. I procured a few bucketfuls, and was surprised to find the 'matter' consisted of millions of dead fish closely packed together. But, stranger still, the fish were headless, and cleaned inside of all entrails. It was as if Neptune had been preparing a feast and changed his mind. The cause of the death of the fish was sulphurous gas coming up from the bottom of the sea, a phenomenon I have frequently met with. When the fish died they floated to the surface, and laid in the still calm water exposed to the sun. Putrefaction set in, and the very heavy heads of the fish dropped off, and carried with them the whole of the inside portion. The appearance of millions of cleaned fish, without heads, and about the size of large whiting, was extremely remarkable.'

Steaming on we passed the minor port of Ilo, about halfway between Arica and Mollendo. It is noted for its wines, spirits, and olives. A railway used to run from it to Moquegua, the capital of the province of that name, but was destroyed during the war.

We are now fairly in Peruvian waters, and before our arrival at Mollendo, it is fitting that we should draw somewhat upon our experiences in that Republic, and upon what we learned respecting it, so that the reader may be prepared the better for his journey with us, and may have the spirit of enthusiasm awakened

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within him to see and know something of the country whose history will ever enwrap it in the halo of romance. Peru, in the time of the Incas, extended from Quito in Ecuador to the river Maule in Chile, though the precise area is not known. Cuzco (meaning Navel) was the central province, and the name of 'Peru' was unknown until given to the empire by its Spanish conquerors. The origin of the name has given rise to a good deal of discussion. One writer asserts that Peru was the ancient Ophir, whence Solomon drew his stores of wealth, and which by transition became in time corrupted into Phiru, Piru, Peru. Another writer suggests its connection with Persia as an argument in favour of the Aryan origin of the Quichuans, forgetting, as Prescott points out, that Peru was not the native name of the country. Prescott, writing of the origin of the Peruvian Empire, and founding his statements upon the writings of Garcilasso de la Vega, a descendant of the Incas, says, 'It is lost in the mists of fable, which in fact have settled as darkly round its history as round that of any nation, ancient or modern, in the Old World. According to the tradition most familiar to the European scholar, the time was when the ancient races of the Continent were all plunged in deplorable barbarism: when they worshipped nearly every object in Nature indiscriminately, made war their pastime, and feasted on the flesh of their slaughtered captives. The Sun, the great luminary and parent of mankind, taking

S. E. DON EDUARDO L. ROMANA,
President of Peru, 1903.

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compassion on their degraded condition, sent two of his children—Manco Capac and Mama Oello Huaco—to gather the natives into communities and teach them the arts of civilised life. The celestial pair, brother and sister, husband and wife, advanced along the high plains, in the neighbourhood of Lake Titicaca, to about the sixteenth degree south. They bore with them a golden wedge, and were directed to take up their residence on the spot where the sacred emblem should, without effort, sink into the ground. They proceeded accordingly but a short distance, as far as the valley of Cuzco, the spot indicated by the performance of the miracle, since there the wedge speedily sank into the earth, and disappeared for ever. Here the children of the Sun established their residence, and soon entered upon their beneficent mission among the rude inhabitants of the country—Manco Capac teaching the men the arts of agriculture, and Mama Oello initiating her own sex in the mysteries of weaving and spinning.' There is no doubt the Incas were splendid agriculturalists and shepherds, and their Peruvian descendants still retain in a marked degree the traits of their ancestors, especially so in their aptitude to manage that most difficult of animals, the Llama of the Cordillera. This may be due to the fact that the Llamas were formerly exclusively appropriated to the Sun and the Incas. True, the Indians no longer cultivate the mountain sides right up almost to the snowline, as their ancestors did, by an elaborate system of irrigation, but the population is now a comparatively small one, and the

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administration of the country is different. Every one under the old regime was in a sense a slave to the Inca monarchs. The people had to attend to the lands of

LLAMAS.

the Sun, then to those of the old, the sick, the widow and orphan, and the soldier in actual service, before they could attend to their own, and lastly they cultivated the lands of the Inca. There is something very noble underlying this apparently rigorous law, which might well be imitated in more enlightened and advanced centres of civilisation. No one can look upon the terraced mountain heights of Peru, or the remains of their roads, aqueducts, bridges and temples without feelings of admiration and surprise at the indomitable perseverance resulting from a system which, whilst

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from first impressions would seem oppressive, really disciplined the entire nation, save only the sacred, august and supreme Inca. The whole life of the natives seemed to savour rather of a devotional service to their god, the Sun, and his earthly representative, than to be filled up with the dreary execution of exacting duties. Though opulence could not be dreamed of in the case of the lower orders, and what might be termed a passable poverty seemed to be the common lot, the native was entirely happy; he could sing and chant the popular ballads of the time with a heartiness which of itself signified a spirit of contentment with his work and surroundings, and if his lot were hard, it was at all events secure; ensured him a peaceful if a somewhat uneventful existence, and made provision for the time of his old age and infirmity. When all is said, the joys of life were then, as now, found in occupation, and idleness in the sight of the Inca was a crime.

Never have we read any more interesting book than Prescott's 'History of the Conquest of Peru,' unless it be that on the 'Conquest of Mexico' by the same author. The history reads like a romance, and it would be difficult, did we not know the fact, to believe that Pizarro with a mere handful of men could conquer a country, not in a comparative state of savagery as were the Mexicans when Cortes performed his brilliant exploits, but under a well-ordered Government, in a difficult country, and, for the period, in a fairly advanced state of civilisation. The whole country was under an organised system of inspection, with four

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great roads for convenient communication between Cuzco and the outlying four parts of the Kingdom of Tavantinsuyu (or 'four quarters of the world'), and an army in times of peace could be moved from one end of the country to the other without difficulty—lodgment and provisions being provided under a regulated system to meet such exigencies. These served the purposes of the invaders only too well, as events proved, and the Inca dominions, after a severe struggle, filled up with deeds of heroism and sacrifice, passed over to the King of Spain. Pizarro and his handful of followers landed in Tumbes in 1532, armed with authority from the Spanish monarch to take possession of the country, and his arrival fortunately synchronised with the consummation of a revolution. It seems the Inca monarch Huayna Capac, who died in 1525, had become so attached to his son Atahuallpa, and who was not the direct heir to the throne, that he determined on his deathbed to divide his dominions between his son Huascar, the rightful heir, and Atahuallpa, giving to the latter the ancient kingdom of Quito, his mother being the daughter of the last 'Scyri' of that kingdom. Huascar was easy-going, whilst Atahuallpa was warlike, ambitious and daring, and was constantly engaged in enterprises for the enlargement of his own territory. All went peacefully for about five years, when a claim put forward by Huascar for the territory of Tumebamba resulted in a contest for the entire kingdom between the two brothers. When the Spaniards landed, Huascar had been defeated and made prisoner, and Atahuallpa's army had marched on and

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taken possession of Cuzco. This success was followed by the massacre of most of the Inca nobles in an attempt to stamp out the royal line. Meanwhile the Spaniards were advancing, and the adventures of the army on the march, the meeting with Atahuallpa at Cascamalca (now Caxamarca), the terrible fight and massacre of the Indians at that place, the capture and execution of Atahuallpa, fill the page of history with deeds and adventures which border on incredulity. It requires no effort of the imagination to picture the scene, and the consternation of the Spanish Embassy, when, coming within sight of Cascamalca, they saw along the slope of the hills for several miles 'a white cloud of pavilions covering the ground as thick as snowflakes.' With the effrontery of desperation, however, they went on to the city, which they found deserted, and, having carefully arranged their plan of action, they beguiled the Indian monarch into the city, and after great slaughter took him captive. The Spaniards, whose credulous fancies had created a veritable 'El Dorado' of Peru, had been somewhat disappointed in the amount of treasure they had thus far secured, and Atahuallpa, in confinement, was not long in discovering their lust for gold. But what was gold to liberty, and to secure that he promised Pizarro, as his ransom, that he would not merely cover the floor of the room in which he was imprisoned, but would fill the room with gold as high as he could reach. It is significant that, in marking the wall, Atahuallpa had to stand on tip-toes. The treasure was collected, but the monarch was not released. He

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was put to trial, and, although he offered to double the ransom, was executed. There is a famous picture in Lima of the death of Atahuallpa, of which we were, fortunately, able to secure the photo (though but an indifferent one on account of the want of light), which serves as our illustration. It was the custom for the

DEATH OF ATAHUALLPA.
(From a Painting in Lima).

wives of the monarch, at his death, to sacrifice themselves, so that he might be accompanied to the land of the Sun.

Then followed civil wars, and the famous march of Pizarro's associate, Almagro, into Chile, the secession from Spain of Pizarro, and his ultimate assassination in Lima. Very few of the early followers of Pizarro retained much of the treasure which they wrested from the Incas. Many were killed in the wars, and others

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gambled away their riches in a single night. Prescott tells of one cavalry man who got as his share of the booty the image of the Sun (in pure gold) from the Inca temple at Cuzco, gambling it away in a night, and he gives this tale as the origin of the Spanish proverb 'Juega el Sol antes que amanezca'—'He plays away the Sun before sunrise.'

The wealth of Peru has become a household phrase, and whilst the Incas, with their primitive knowledge of mining, extracted a large quantity both of yellow and white metal from the Andes, they merely scratched the surface, and capital and labour alone are needed to give a reality to the phrase in the present day. The area of the Republic, as it now exists, is close upon 500,000 square miles, and the population about 3,000,000, including some 3—400,000 uncivilised Indians. Under the Spanish the Peruvians were prohibited from growing the olive, the vine, and Porto Rico pepper, and the Chilians from growing flax, in order that the growers in Spain of these products might not suffer.

We were much struck in Lima, and other prominent Peruvian cities, by the fact that the people were to a large extent clothed in European cloth garments, and we certainly felt no inconvenience from those we wore. The fact is that although in the torrid zone, its climate is never really oppressive. The only reason we heard for this, was the existence of what is known as the Humboldt current, so named after its discoverer. Maury, alluding to this current, says, 'It is felt as far as the Equator, mitigating the rainless climate of Peru

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as it goes, and making it delightful. The Andes, with their snow caps, on one side of the narrow Pacific slopes of this inter-tropical Republic, and the current from the Antarctic regions on the other, make its climate one of the most remarkable in the world.'

Fogs and mists are experienced along the Peruvian coast from June to September, which at rare intervals take the form of a slight drizzle, but from November to April the sky is absolutely cloudless. South-east 'trades' prevail perpetually along the coast, and although, as Maury puts it, 'this coast is on the great south sea boiler, it never rains.' His reason for this, which is well worth quoting, is as follows :—

'The south-east trade winds on the Atlantic Ocean 'first strike the water on the coast of Africa. Travel- 'ling to the north-west, they blow obliquely across the 'ocean until they reach the coast of Brazil. By this 'time they are heavily laden with vapour, which they 'continue to bear along across the continent, deposit- 'ing it as they go, and supplying with it the sources 'of the Rio de la Plata and the southern tributaries 'of the Amazon. Finally they reach the snow-capped 'Andes, and here is wrung from them the last par- 'ticle of moisture that that very low temperature can 'extract. Reaching the summit of that range, they 'now tumble down as cool and dry winds on the 'Pacific slopes beyond. Meeting with no evaporat- 'ing surface, and with no temperature colder than 'that to which they were subjected on the mountain 'tops, they reach the ocean before they become 'charged with fresh vapour, and before, therefore,

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'they have any which the Peruvian climate can 'extract. The last they had to spare was deposited 'as snow on the tops of the Cordilleras to feed moun- 'tain streams under the heat of the sun, and irrigate 'the valleys of the western slopes. Thus we see how 'the top of the Andes becomes the reservoir from 'which are supplied the rivers of Chile and Peru.'

This absence of rain, whilst in itself a great deprivation, has tended to enrich both Peru and Chile,—the former in its guano deposits, and the latter in its nitrate. Some 20,000,000 tons of guano have been shipped from Chincha and Guanapé Islands of Peru. Captain George Peacock, who commanded the first steamer sent by The Pacific Steam Navigation Company to the Pacific, writing to the 'John o' Groat Journal,' in April, 1874, in which an article had appeared, suggesting that cannon should be fired on the coast of Peru to produce rain, tells the story of how at the close of the seventeenth century, the Vatican ordered the priests to pray for rain, little dreaming what a serious matter it would have been had their prayers prevailed, for all the guano and nitrate of the country would have been ruined.

We alluded in a previous chapter to the Chinese and Japanese labourers on the sugar estates in Peru, and judging from what we witnessed, we think the country would be well advised to encourage such labour, specialising it if need be. In 1855, we understand, the system commenced, and, according to Clements Markham, over 58,000 Chinese landed in Peru between 1860 and 1872. The Chinese immigra-

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tion was put a stop to some years ago, and a scheme for bringing in Japs turned out a failure.

The importance of the sugar industry will be recognised when we mention that during 1905 the total quantity exported amounted to about 134,000 tons, of which 42,064 tons were shipped from the port of Salaverry. The consumption of sugar in Peru itself amounts to about 23,000 tons per annum. We shall deal with the exports as we pass the several ports of shipment, but we may state here that factories are being established in the country, and that the principal articles now manufactured are cloth, blankets, boots and shoes, hats, articles of clothing, soap, candles, brooms, cigars, cigarettes and wines.

In 1905 the total imports into Peru amounted in value to £4,329,151, and the exports to £5,751,621, making a grand total of £10,080,772, as compared with £5,468,160 for 1899.

One can scarcely allude to Peru without referring to the Peruvian Corporation, which has played so important a part in the effort to develop the latent resources of the Republic, by its railways, and its steamers on Lake Titicaca and the River Desaguadero. There is no doubt that the shareholders have not as yet reaped much advantage from the investment, but it is hoped that the future will contain and bestow the long looked for and merited reward of such a splendid enterprise.

All business in the principal towns of Peru is now done in gold, on the basis of ten soles to the £, or gold 'inca,' silver having been discarded as the

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principal currency, and the issue of paper has been stopped. Each sol is divisible into 100 centavos, the coins in use being of the value of 50, 20, 10 and 5 centavos.

On the eastern slopes of the Andes, Peru can vie with the Brazils in the production of india rubber, coffee, cocoa, quinine, vanilla and sarsaparilla; recently the country has been explored, and as the result companies have been formed to exploit it, though the difficulty of cheap exportation has not yet been overcome. The Oroya Railroad, to which we allude in the next chapter, will, however, play a considerable part in this expected development.

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CHAPTER XXV.

MOLLENDO. MISTI. MOLLENDO TO AREQUIPA. AREQUIPA. TINGO. "MEDENAS." "MIRAGE." "AIRE." QUILCA. CHALA. BEST LIGHT ON THE COAST. LOMAS. PISCO. ICA. TAMBO DE MORA. CHINCHA ISLANDS. CERRO AZUL. CALLAO. IMPORTS AND EXPORTS. LA PUNTA. ANCON. MAGDALENA. MIRAFLORES. BARRANCO. CHORILLOS. LIMA. OROYA RAILROAD. JOURNEY TO CASAPALCA. LLAMAS. MAJOR AND MINOR PORTS OF PERU.

IN due time we arrived at the port of Mollendo, and were certainly not favourably impressed with it. The port is quite unsheltered, and there is a constant

MOLLENDO—PORT.

heavy south-westerly swell and strong current which makes landing difficult and sometimes dangerous. It is nevertheless a busy and rising place, being the port

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for Arequipa, Puno, Cuzco and other places in the south of Peru, as also for La Paz, Bolivia. There is a good fixed light, which can be seen for a distance of 17 or 18 miles in clear weather. Ships anchor about half-a-mile from the Peruvian Corporation mole in 23 to 24 fathoms of water, and the cargo is dealt with by means of wooden launches of from 18 to 21 tons, and which can go alongside the mole. This mole is provided with two small donkey engines, and a pair of sheer-legs. About 65,000 tons of cargo pass over the mole annually, and what is wanted to make the port a good one is a breakwater.

The imports consist of all classes of European and American manufactured goods, and the exports of alpaca, vicuna and other wools, borate of lime, gum, gold, silver and copper ores, barilla, gold in dust and bar, bark, coffee, coca, hides, etc.

Mollendo is a town of about 5,000 inhabitants, and has no attractions other than those connected with business. It is supplied with water from Arequipa, the pipe line running alongside the railway track.

Early in the morning following our arrival, we entrained for Arequipa, situated on the slopes of the Misti, and between 7,000 and 8,000 feet above sea level. The Misti, which towered above us in the distance, attains the height of 19,000 feet. There is a large crater at the top which emits smoke at times, and leads to the source, no doubt, of the frequent and terrible earthquakes experienced in the district. The journey from Mollendo to Arequipa occupies eight hours, as it is very slow work on the up-line. The track lies along barren slopes

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THE MISTI (*19,000 feet*).

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and the edges of deep quebradas. There are a number of small stations *en route* at which the train pulls up, and at each of which numbers of Indians are seen selling fruits, *Chicha* (liquor), cakes, *Puchero* (thick soup), etc. After three hours journey we came in sight of the Rio Chile, running through a deep ravine, and all along its banks in the narrow pass the land was beautifully green and well cultivated,—maize, sugar cane and fruits predominating. The fruits included the palta and fig. The former is more like a vegetable than a fruit, and is delicious when eaten with vinegar, salt and pepper. The Indian huts were very poor, and were either thatched with straw or had conical-shaped roofs plastered with mud.

The nearer one gets to Arequipa, the finer the scenery becomes, the fields broaden out, and cattle are

AREQUIPA.

seen grazing, or threshing corn in the very primitive fashion of treading it out. My first impression of Arequipa was that I had arrived at Jerusalem. Not

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that I have ever visited that Sacred City, but the prints and photographs of it are so universally known that almost anyone from Europe visiting Arequipa would be struck with the resemblance. There is, we found later, a street called Jerusalem in the City.

Innumerable domes and conical roofs are to be seen, which at first sight appear to be made of mud, but on closer inspection turn out to be lava from the adjacent volcano. In fact large quantities of lava are used in the construction of the City. My bedroom in the hotel had walls three feet in thickness and an arched roof of lava. This is to prevent the building from falling during an earthquake, and also to keep out the heat of Summer and the cold of Winter. Our illustration shows

THE PLAZA IN AREQUIPA AFTER AN EARTHQUAKE.

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the result of one of the terrible earthquakes, and in spite of thick walls, nearly the whole of the Plaza houses came down, and also part of the old Cathedral. Arequipa is a very quaint old Spanish City, established by Pizarro, and it is said that there are more monks and nuns in it than in Rome itself. The Cathedral is a magnificent structure, as is also the Church known as San Francisco. There are many Churches, and the doors and everything about them differed from any

CHURCH IN AREQUIPA.

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structures of the kind I had ever seen before. The ornamental work, as shewn in the illustration, is excellent, and indeed the whole city is full of quaintly carved doors and structures deeply interesting to any one with

GERMAN CONSULATE, AREQUIPA.

antiquarian tastes. Arequipa has the reputation of being a place in which people without lungs can live, but the Municipality should do away with the open street sewers, which fill the streets with as many distinct

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smells as are attributed to the famous city of Cologne. There are about 35,000 inhabitants in the City, and the streets always present an animated scene, as there are numerous Indians moving about in coloured 'ponchos' and dresses. The women ride like men, but do not wear trousers either in fact or theoretically. Now and then the streets are crowded with mules and donkeys, some carrying blocks of lava, and others alpaca, vicuna and sheep's wool. These are driven by mounted Indians, and the whole form a

OLD DOORWAY, AREQUIPA.

DONKEYS CARRYING BLOCKS OF LAVA, AREQUIPA.

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picture of life and colour only to be seen in these regions. Arequipa, from an artistic point of view, is a perfect Paradise, the only trouble being that the subjects are so numerous as to render any choice embarrassing. On the Carmen Alto, a short distance from the City, an American astronomer has erected an Observatory, which is one of the highest in the world.

There is a bathing resort at Tingo, a short distance from the City, and at which there are free open-air baths.

BATH, TINGO.

In these all sorts and conditions bathe together, from the darkest coloured Indian to the aristocratic Peruana.

The whole district around Arequipa is extremely interesting and reminiscent of the Inca dynasty. In the background can be seen some magnificent Andean peaks, amongst them being the white dome of the Cerro de Puno, about 125 miles distant, and having an altitude of 22,000 feet. On the return journey to Mollendo, our attention was drawn to a large number of 'Medenas' or moving sandhills, as well as to a beautiful mirage, in

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which the Andes were reflected as in a deep blue and silver lake. This was a much more perfect example of that phenomenon than the one we saw on the nitrate 'pampa.'

There is a curious complaint along this arid coast arising from what is known as an 'aire.' This we learnt takes the form of a current of electricity, created possibly by the presence of so much metal in the Cordilleras. It strikes just like a current of wind, and the result is in some cases appalling. We heard of a man who, when out riding, was struck by one of these 'aires,' and as the result his face was twisted, and his horse killed beneath him. There does not appear to be any accompanying flash, and as far as we could learn the 'aire' strikes usually in an oblique direction. As a consequence, the people along the Coast are very careful not to sit in draughts.

Mollendo was simply alive with mosquitoes and sand flies of the most vicious order when we returned, and we consequently made haste to join the Chilian steamer 'Mapocho' bound for Callao. Steaming thence, the first port we passed was Quilca, a very dangerous and exposed place,—the only choice of anchorage being between 40 and 10 fathoms, and the latter brings the ship close to the rocks. We passed too far out to see the port, but it is interesting as being the fishing village from which the Incas residing at Cuzco got their fish. Cuzco is about 100 miles distant, and 12,000 feet above sea level, and the fish were carried by relays of running Indians, who, it is said, in this way covered the distance in a night.

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Early on the morning after our departure from Mollendo, we anchored off the port of Chala. We were all ready to go ashore but found we could see everything from the ship. Chala is a cattle shipping port,

HEAVING THE LEAD.

and the animals are driven there from the interior, over the hills and 'pampas,' for two or three days without food or water. They are then shipped and go without food until their arrival at Callao, though they get, of course, plenty of water on board. It was not pleasant to see them hauled out of the launches on to the ship, though every precaution was taken not to hurt them.

On the hills in the distance dark olive yards were visible, and in the water around the ship innumerable small fish were darting hither and thither in large shoals, followed by bonitos, sharks and seals, whilst overhead, waiting for their opportunity, was a perfect

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cloud of pelicans. The rocks were covered with cormorants, also taking a lively interest in the proceedings.

There was a discussion at breakfast on the subject of lights and lighthouses, and various opinions were called forth as to the best light on the coast. As we were not able to come to a decision, it was agreed to refer the question to the Captain for settlement. This being done, he stopped all further discussion by answering 'daylight,' and all parties were satisfied. The Captain was evidently in a facetious humour, for he at once enquired if we knew the reason why the two short watches on board were called 'dog watches.' We told him all we knew on the subject, but as he negatived our replies, we gave the conundrum up and made room for the display of his superior knowledge. It took this form: 'A dog watch,' he solemnly said, 'is so called because it is a watch *cur*-tailed.'

Looking over the side later, we saw some enormous sharks, and an attempt was made to catch one, but unsuccessfully.

Lomas is the next port north, but we saw nothing of it, our first port of call after Chala being Pisco. Our stay in the port being very short, we were unable to go ashore, but our eyes were once more gladdened by the sight of a pleasant green valley. Plenty of grapes, paltas, bananas, water-melons and other fruits and grain are grown round Pisco. The exports consist of cotton, wool, minerals, sugar, hides, wines and aguardiente, whilst the imports comprise all kinds of manufactured goods and provisions, such as flour, rice,

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etc. There is a good pier at the port, about 1,000 feet in length, which is used for the shipping and landing of passengers and cargo. The depth of water at the end of the pier at low tide is three fathoms, and cargo is worked in and out of launches by means of one steam and two hand cranes. The rise and fall of water is about 3 feet. A railway runs from Pisco to Ica (population 10,000), a distance of 46 miles to the south-east. Near Ica are the mineral baths of Huacachma, celebrated for their efficacy in cases of rheumatism and diseases of the skin and stomach.

The town of Pisco—4,000 inhabitants—is connected with the port by a tramway about one mile in length.

Tambo de Mora, a small port about fourteen miles north of Pisco, is somewhat of the same character as Pisco, and here again it was useless for us to attempt to go on shore. Indeed it would have been dangerous, as there was a very high sea running, and people coming on board found the greatest difficulty in doing so.

We had passed on our journey the famous Chincha Islands, from the guano deposits of which the Peruvian Government at one time obtained an immense revenue. The town of Chincha is situated about six miles from the port of Tambo de Mora.

Passing the small sugar port of Cerro Azul, we arrived at Callao early on the morning of the ninth of January, and were surprised, after the descriptions we had had of that town, to find it such a nice place, with a good club, plaza, clean streets, and a very business-like air about the whole. The Muelle y Darsena or dock, is a good one, but the loading and discharging of cargo is

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slowly performed; there is also a floating dock for repairs belonging to the Callao Dock Company. Plenty of business is done in the port, and as for pleasure, really given a boat and a horse, both of which are cheap enough, a man might readily get all the amusement he wants. There is a bathing resort at La Punta, a short tram ride from Callao, where the President of the Republic and some of the *élite* of Lima stay during the summer season. The lady bathers resemble our lifeboatmen in appearance, being clad, when going into the water, with what looked to be like large 'Sou'-westers,' coats, trousers and shoes.

About 375,000 tons of cargo are dealt with in Callao in a year, and the exports consist of sugar, coffee, wool, hides coca leaves, oilcake, metals, etc. The imports embrace manufactured goods and general merchandise. During 1899 the total tonnage of cargo imported was 290,751 tons, and the exports during the same period amounted to 82,843 tons.

Coaling is the only work allowed to be done outside the dock, and there are a number of coal hulks stationed in the port.

Whilst watching the discharge of a steamer at the Darsena, we noticed quite a number of labourers broaching cargo, and we are glad that Mr. Consul-General St. John has taken up the question vigorously in his recent report. These labourers are of the very worst type, and commit their depredations in concert, and woe to anyone who interferes with them, as they are all armed with knives. Robbery is one of the crying evils of the port, and the Maritime Authorities should

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be invested with ample power to stamp it out. The Consul-General also points out the necessity for a Lazaretto at the port, and we can fully endorse all he says as to the need of such. The detention to which steamers are put is a serious hindrance to trade, and increases the cost of commodities in Peru, as naturally shipowners must protect themselves against loss by charging higher freight.

CALLAO—STREET SCENE.

The Dock Company owns three tugs, and there are plenty of launches in the port. The Callao Floating Dock is said to be capable of lifting vessels of 5,000 tons and 21 feet draught. The dock is, however, now getting somewhat old, and it is doubtful if the Authorities would receive so large a vessel. The

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inside dimensions are 300 feet by 76 feet by 29 feet 3 inches.

Callao is the chief port of Peru, and has a population of about 35,000 inhabitants, although some of the merchants live in Lima, the Capital, which is only eight miles distant, and is connected by a good train service.

Besides La Punta, there are a number of seaside resorts within easy distance, such as Ancon, Magdalena, Miraflores, Barranco and Chorrillos.

We were much impressed by Lima. It is a splendid city, full of attractions, with its Cathedral, fine old churches, museum, public buildings, busy streets and pretty plazas. Strange to say, however, the fine Cathedral Plaza had, shortly before our arrival, been robbed of one of its chief adornments. Some member of the administrative body had taken a dislike to trees as interfering with the view, and possibly serving as aids to revolutionists, and so the trees had to be cut down, much to the regret of many of the citizens. The museum contains quite a number of gruesome specimens of the Inca race, picked up in caves and on the nitrate 'pampas,' in a splendid state of preservation, and shewing the postures in which they met their death. The chief interest, however, lies in the picture gallery, which contains a large collection of portraits of Inca monarchs, and the famous picture to which we alluded in the preceding chapter, portraying the funeral of Atahuallpa. Prescott describes this ceremony as follows: 'The ceremony was interrupted by the 'sound of loud cries and wailing as of many voices at 'the doors of the Church. These were suddenly thrown

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'open and a number of Indian women, the wives and 'sisters of the deceased, rushing up the great aisle, 'surrounded the corpse. This was not the way, they 'cried, to celebrate the funeral rites of an Inca: and 'they declared their intention to sacrifice themselves on 'his tomb, and bear him company to the land of spirits.'

Lima lies on the banks of the river Rimac, about 500 feet above the level of the sea, and has a population of say 104,000. The chief interest in Lima lies undoubtedly in its historical connections. It was founded by Pizarro, and was the last of the Spanish Colonies on the West Coast; the successful revolution in Peru to secure its independence occurring, with the help afforded by the Chilian Navy and an army from Argentina, in the year 1820. The independence of Peru was actually declared on the 28th of July, 1821.

Prescott says, in regard to the selection by Pizarro of the site for the city, that 'The central situation of the 'spot recommended it as a suitable residence for the 'Peruvian Viceroy, whence he might hold easy com-'munication with the different parts of the country, and 'keep vigilant watch over his Indian vassals. The 'climate was delightful, and though only twelve degrees 'south of the Line, was so far tempered by the cool 'breezes that generally blow from the Pacific, or from 'the opposite quarter down the frozen sides of the 'Cordilleras, that the heat was less than in correspond-'ing latitudes on the continent. It never rained on the 'coast: but this dryness was corrected by a vaporous 'cloud which, through the summer months, hung like 'a curtain over the valley, sheltering it from the rays of

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LIMA.

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'a tropical sun, and imperceptibly distilling a refreshing 'moisture that clothed the fields in the brightest verdure.' And later he writes that 'amidst the woe and desolation 'which Pizarro and his followers brought on the 'devoted land of the Incas, Lima, the beautiful City of 'the Kings, still survives as the most glorious work of 'his creation, the fairest gem on the shores of the 'Pacific.'

Lima was, as just cited, called 'Ciudad de los Reyes' (City of the Kings) in honour of the day, viz., the sixth of January, 1535,—the festival of Epiphany. This name, however, was supplanted by that of Lima, a corruption of Rimac. Winter is from June to November, during which the temperature ranges from 57° to 61°. In Summer—December to May—the mean temperature is 72°. Many interesting Inca and Spanish relics in silver and gold may be obtained in Lima, as well as excellent specimens of the 'drawn' silver art of Ayacucho. Silver seems to have been known the first of all metals. In the book of Genesis it is recorded that Abraham paid for the ground for his wife's burial place in shekels of silver, and this may be due to the fact as discovered by metallurgists that silver ore is found in a metallic or native state more frequently than any other metal. The silver mines of Potosi contain this native silver, and large quantities have been found in a massive condition at Copiapo in Chile.

We had heard so much of the Oroya railroad which runs from Lima across the western and central Cordilleras to Oroya in the Xauxa Valley, that we determined to journey over the line as far as Casapalca,

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13,600 feet up. The railroad was commenced in 1870, and rises 5,000 feet in the first 46 miles. The distance to Oroya is 138 miles. There are sixty-three tunnels, the highest being at Galera Pass, 15,665 feet above sea level and 2,032 yards long. The Peak above, Mount Meiggs, is 17,575 feet high. After passing through this, the train descends on the eastern side of the Andes to Oroya which city stands at an altitude of 12,178 feet. This is the highest railroad in the world, and is justly considered to be one of its finest engineering feats.

To journey to Casapalca and back in a day, meant early rising, as the train was timed to leave Callao at 6 a.m., and it was quite midnight before we got back. Time was allowed for breakfast at Matucana (7788 feet), and for dinner on the return journey at Chosica, 2,800 feet, a celebrated health resort for pulmonary complaints. The scenery after passing Lima was somewhat barren, but the higher we climbed the better it became, and we had doubts whether we had ever seen anything more grandly beautiful. There are a few trees following the course of the Rimac and evidences of cultivation, but more interesting than anything else were the Inca relics,—fine examples of the terracing of the mountains in most dangerous places being frequently seen. The railway passes through some tremendous cuttings, over almost impossible bridges, and we were continually describing circles,—sometimes seeing the railway lines at two different levels beneath us. The Verrugas Bridge is the most interesting structure of the kind. It is on the cantilever principle, with one centre span 235 feet long in the clear, and two shore spans of 140 feet each, and

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it is 257 feet from the bottom of the ravine it crosses. We got out of the train at this point in order the better to appreciate this triumph of engineering.

It is difficult to see how the railway can pay on its original cost, unless an enormous traffic is tapped on the eastern side of the Cordilleras. The first 85 miles cost, we were told, £5,000,000. The balance of the 138 miles, which is the more difficult portion must have cost considerably more, and we therefore estimate that the total cost must be something like £11,000,000. We did not suffer to any appreciable extent from '*Siroche*,' though one or two in the train had bad heads, and one suffered from slight bleeding from the ears and nose. The reason we got off so lightly was, I believe, because we had breakfasted at 7,000 feet, and were therefore fortified. We certainly all felt that we could not move about at Casapalca as customary, and we did not carry our usual colour. I really believe we presented the appearance of a party of invalids, though this did not prevent us from enjoying the splendid spectacle we were privileged to see at this mining centre. It was a Sunday, and the small town was crowded with Indians in picturesque costumes holding market. What, however, to us was more interesting were the numerous llamas (the little camel of the Indians), decorated with flowing ribbons, some loaded with silver ore, others with market produce, and others roaming or lying about quite untrammelled. There was also a number of mules, and one of these got at cross purposes with a llama, with the result that the latter commenced to spit, and if a llama spits on anyone or anything it is a serious thing, as the smell is something

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dreadful and very difficult to get rid of Any clothing spat upon has to be destroyed. The llama is not bridled in any way but is driven along in herds, free to nibble or eat and drink as it goes. It is extremely particular

LLAMAS AT CASAPALCA.

as to the load it carries, and if a weight exceeding 100 lbs. is put on its back, it will sit down until relieved of the extra weight. Nothing will make it go on with the additional burden.

The Indians speak a little Spanish, though Quichua is their language. They are short in height, thick set and very hardy, and can travel for days subsisting simply on a few coca leaves. 'Coca, or cuca as it is 'called by the natives, is,' says Prescott, 'a shrub which 'grows to the height of a man. The leaves, when dried

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'in the sun and being mixed with a little lime, form a 'preparation for chewing. With a small supply of this 'cuca is his pouch and a handful of roasted maize, the 'Peruvian Indian of our time performs his wearisome 'journeys day after day without fatigue, or at least 'without complaint. Even food the most invigorating 'is less grateful to him than his loved narcotic. If 'used to excess, it is attended with all the mischievous 'effects of habitual intoxication.'

We purchased some snow-preserved potatoes called 'chunos' from the Indians as curiosities, though these form one of their staple foods in winter.

The opportunity of inspecting the mining works was afforded us, but we did not feel equal to the exertion, indeed one of our party, who ventured to jump over a narrow stream of water, had to be taken to the train in a fainting condition.

We were told by a traveller who joined us and who had been exploring on the eastern Andes, that the country there is most luxuriant and fertile, and as soon as the railway is extended, and cheap transit facilities are offered, a large trade will follow. Rubber, mining and other syndicates have been formed for the exploiting of the vicinity, and it is the intention of the railroad to tap the rich mining district of Cerro de Pasco, about 100 miles north of the present terminus. Cerro de Pasco has about 12,000 inhabitants.

Under the contract with the Bondholders, the following extensions of the railroad have to be made, in addition to that to Cerro de Pasco, viz:—

Oroya to Tarma, Concepcion and Huancayo.

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Cerro de Pasco to Mairo (200 miles inland from Oroya).

Tarma to the River Ucayali, the chief navigable tributary of the Amazon.

The great importance of this last undertaking cannot be estimated, as it will open up communication between the Pacific and the Atlantic across the centre of the continent, and through the wealthiest regions of Peru.

After our return to Callao, we had an opportunity of visiting Chorrillos and Barranco, both fine bathing resorts, and also Ancon, where we inspected the sugar estate alluded to in Chapter VI. The reason why the cane grows so well in the Rimac valley is because it is watered artificially, the river becoming merely a rivulet before debouching into the sea.

Altogether we were ten days on shore at Callao, and in addition to getting through a large amount of business, we saw much that was both interesting and instructive.

The major and minor ports of Peru are as follow:—

Major—Ilo, Mollendo, Callao, Salaverry, Pacasmayo, Eten, Pimentel, and Paita.

Minor—Quilca, Chala, Lomas, Pisco, Tambo de Mora, Cerro Azul, Ancon, Chancay, Huacho, Supe, Huarmey, Casma, Samanco, Chimbote, and Huanchaco.

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CHAPTER XXVI.

SUPÉ. HUACHO. HUARMEY. CASMA. SAMANCO. CHIMBOTE. SALAVERRY. TRUJILLO. CHAN CHAN RUINS. CHICAMA. CHOCOPE. ASCOPE. PACASMAYO. CAJAMARCA. SAN PEDRO DE LLOC. CHEPEU. GUADALUPE. PUEBLO NUEVO. BOCA DEL RIO. PUEMAPE. RUINS OF PACATNAMU. ETEN. CHICLAYO. PIMENTEL. PAITA. ONE OR TWO STORIES. PIURA. CATACAOS. TALARA. SECHURA SALT MINES. TUMBES. GUAYAS RIVER. THUNDERSTORM. PUNA. GUAYAQUIL. PROJECTED RAILWAY TO QUITO. ALLIGATOR SHOOTING EXPEDITION TO BABAHOYO. RIO GRANDE. ZAMBORONDON. CHIMBORAZO. QUITO. MAJOR AND MINOR PORTS OF ECUADOR.

OUR first port of call after leaving Callao was Supé, about 90 miles to the north, passing Huacho on the way. This small port, as also Supé, exports sugar and cotton, and large supplies of agricultural produce and fruit are drawn from the Huacho district, for Lima and Callao. There is a small pier at Supé, and although the port did not look an inviting one to land at, we went on shore, but saw nothing worth recording. The adjacent mountains have the appearance of huge sandhills, but there are plenty of sugar estates inside in the valleys where there is water. The stay in Supé was a very short one, as the steamer had to push on to Salaverry, passing the minor ports of Huarmey, Casma, Samanco, and Chimbote. These ports are all outlets for the mining districts in the interior, and a fair quantity of sugar is shipped at Chimbote.

Salaverry is 256 miles north of Callao. Usually a very strong surf and high sea prevail there, so that landing is a somewhat dangerous operation, though

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we were hoisted out of a launch in a tub by the pier crane. This is considered to be the best way of landing, but some of the launches went through the surf, and men almost naked rushed into the sea to carry the people on shore in chairs. A good many of the passengers got wet during the process. When our boat came alongside the mole, we transhipped into a sugar launch and the tub was lowered into this, and then we were swung out and up. One lady who was going off to the ship fainted when she got out of the tub, and the operation certainly looks worse coming down, as the launch keeps running in and out and up and down with the heavy sea and swell. Everyone about is on the lookout for tips, and the passengers are designated

LANDING BY MEANS OF TUB, SALAVERRY.

CATHEDRAL, TRUJILLO.

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'Patron,' until the word creates nausea, as the process of shelling out does not, like some others, grow on one by constant repetition. As a train was about to leave the port for Trujillo (or Truxillo), the Capital

VIEW IN TRUJILLO.

of the Department, and one of the most important commercial centres in the North, we proceeded thence, deferring an inspection of the port until our return. Trujillo takes rank amongst the ancient Spanish towns in the country, being founded by Pizarro, and was formerly a centre of the aboriginal tribes There are still the ruins of an ancient city called Chan Chan, founded by the Chimu tribe of Indians, to be seen in the vicinity, and 'huacos' and other Indian relics and ornaments can be obtained in

HUACO.

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Trujillo. On landing at Salaverry, the coast looked barren as usual, though here and there one could see that attempts had been made to cultivate the soil, and we were, therefore, hardly prepared for the beauty of the tropical valley through which we passed on our way to Trujillo, irrigated by a stream flowing down from the Andes, which at this point tower like rugged giants in the background. Trujillo has a population of about 10,000 inhabitants, and there are many very interesting buildings in the city, amongst which the Cathedral naturally takes the lead. After taking a few photos, we entrained for the port, and were soon interested in watching the natives loading sugar from the beach. The men run out into the surf with bags of sugar on their shoulders, watching their opportunity to throw these into the lighter which rides close in, anchored to a buoy. It is wonderful the weight these men can carry and the speed with which they move, though, as the breakers come in very rapidly, the sugar at times gets saturated. The operation of loading is also performed at the mole, or half-mole, as the other part was swept away by the sea in 1895. A new mole is being built 250 metres in length, and will have three and a half fathoms of water at low tide at the outer end; the rise and fall of water is about 5 feet. Salaverry is certainly a dreary place, consisting of a few huts built of cane latticed together, and one house of *adobé* or mud (sun dried) bricks, and there are no amusements of any kind. About 250 to 300 tons of cargo can be loaded in a day from the beach. The exports amount to about 40,000 tons per annum, 38,000 tons of which is sugar

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and the remainder is made up of ores, wool, cotton, coffee, coca, alcohol and starch. The imports, which total about 11,000 tons per annum, consist of general merchandise, coal, lumber, machinery and wheat. There are 24 launches in the port, varying in size from 20 to 40 tons.

The towns of importance inland from Salaverry are Chicama, Chocope and Ascope, the latter being the terminus of the railway and carrying on a fair trade with the interior. The inhabitants of these towns are all chiefly devoted to agriculture, and there are many very extensive sugar estates in the vicinity.

Early on the morning following our departure from Salaverry, we put into Pacasmayo, and went on shore for an hour. There is an excellent pier, about half a mile in length, and the Peruvian Corporation Railway runs along it, bringing down sugar, rice, hides, silver, copper, etc., for shipment. The production of sugar in the district is confined to one estate, but undoubtedly there is a good opening for more. In the interior there are some large coal deposits, but the cost of carriage to the coast, about eight shillings per ton, interferes with the development of the industry. A company, however, has recently been formed in New York to exploit these coal deposits, and it may find some means of cheapening the transit.

Cargo is handled at the pier by cranes (steam and hand), and there are nine launches for dealing with the traffic, ranging from 15 to 50 tons capacity.

In 1900 the exports were valued at $2,464,996, and the imports at $1,416,500.

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The Railway Company has a repairing shop, so that small repairs to ships may be effected at this port. The railway connects the principal towns of the interior, viz., Cajamarca, San Pedro de Lloc, Chepeu, Guadalupe and Pueblo Nuevo. There are about 45,000 inhabitants in these towns, 15,000 of which may be set down to Cajamarca, the Capital of the Department. Cajamarca, is highly interesting as being the scene of the capture of Atahuallpa by Pizarro, referred to in Chapter XXV.

The Capital of the Province of Pacasmayo is San Pedro de Lloc which has about 15,000 inhabitants, including a small military force, the town being the headquarters of the Sub-Prefect of the Province. The most important town in the province, however, is Chepeu, which has about 9000 inhabitants. Its commercial importance is derived chiefly from the fact that it is the point of departure to and arrival from the mountains.

Guadelupe is the centre of the rice business.

There are bathing resorts at Boca del Rio, at the mouth of the Jequetepeque River, and the fishing village of Puemape, six miles from San Pedro. Near Boca del Rio, we were told, are the ruins of the ancient city of Pacatnamu, also various other ruins, some of which appear to have been pyramids and forts, while others are of cubical form; the whole being of solid *adobé* construction of the pre-Incaic period. The Jequetepeque River attains considerable volume from December to March, and can only be crossed by means of 'balsas' or rafts. In July it becomes nearly dry.

Our next port of call was Eten, and we were

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certainly disappointed, after going through the operation of being 'tubbed' twice, *i.e.*, from the steamer to the launch, and the launch to the iron pier, to find on shore only a railway station and a collection of mud huts. It was our intention to entrain for Chiclayo (population 13,000) about twelve miles distant, but as we found that we could not get back until late at night, when it would be dangerous to embark, we at once returned to the steamer.

The average quantity of cargo that can be dealt with at Eten in a day is 800 tons, say 500 embarking and 300 tons landing. The pier is 840 feet long, with a depth of about 25 feet at low water at its head, and there is a rise and fall of tide of 6 feet.

About 25,000 tons of cargo are shipped per annum and 6,000 tons landed, and there are seven launches of 25 tons capacity each, for dealing with the traffic.

The valley inside of Eten is well populated and fertile, producing sugar, rice, tobacco, etc. In the village about three miles distant from the port, so called 'Panama' hats and plaited cigar cases are made, specimens of which were brought off to the ship for sale. The sea was literally alive with small fish at this port, and as fast as our lines were thrown in, the fish rose to the bait and were hauled on board. They proved to be very good eating later. After shipping a quantity of sugar and rice, we got under weigh for Paita, expecting to make that port in about 14 hours. Between Eten and Talara quantities of oil could be seen floating on the sea, indicating the presence of petroleum, and the oil industry at Talara was, we heard, making good

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progress, as some of the Peruvian Railways are now worked by oil—notably the Oroya.

Thus far we had not experienced any discomfort from the heat, but had determined, as a matter of precaution, to commence taking a few grains of quinine each day on the journey from Paita to the North.

PAITA—NATIVE TOWN.

Proceeding north, we passed Pimentel, the railway from which runs through the same districts as that from Eten, and there is considerable rivalry between the two ports. We arrived at Paita (or Payta) in the afternoon of the day following our departure from Eten, and as we had experienced a stormy passage, were glad to get on shore again for a short time. Paita is a very old fashioned Spanish town—said to be the first in Peru—

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and although a great many of its houses are built simply of laths, it is a most interesting place to look

STREET IN PAITA.

through. It contains a very old church, with an image of the Virgin Mary which has a history. The story as it was told to us is, as nearly as I can recollect it, as

STREET SCENE IN PAITA.

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follows :—About 100 years ago a pirate named Anson sacked the town, and one of his followers, thinking the image was made of silver, tried to cut the head off with a sword. He did not succeed in this, however, though he made a large wound in the throat, from which blood flowed. Seeing the blood, the pirates took fright and fled. Ever since then, on the anniversary of the deed, the wound is said to have the appearance of bleeding.

Although so near the Equator, Paita is often spoken of as the healthiest place in Peru. People live,—so it is reported,—until they get tired out. We heard of some adventurous spirits who invested in a Cemetery in the district. but were unable to get it started. At last in despair they sent to a northern port for a yellow fever patient nearly dead. but when they got him to Paita, he made a rapid recovery, and the Cemetery Company went into liquidation.

Paita—population 2,000—the third port of importance in Peru, is situated on a large and sheltered bay, and is shut out from the surrounding district by immense sandhills. There are two moles, and seventeen large launches for cargo purposes, and some of the launches are flat bottomed, called 'Chatas,' which present a somewhat unique appearance, as they are loaded to a considerable height with cotton and cotton seed. The Railway (Peruvian Corporation) mole is 150 metres long, and there is a depth of 8½ feet at the end at low water. The mole is fitted with cranes which can deal with weights not exceeding 8 tons. The other mole, known as the wooden one, is 152 metres long, has a depth of about 10 feet of water at the end

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at low tides, and is fitted with cranes capable of lifting weights not in excess of 4 tons. This mole is used chiefly for passengers and light traffic. There are a good many small fishing boats, which carry on a trade in salt fish with the ports of Ecuador and Colombia. These boats also convey cargo to the coves of Talara and Zorritos, and sometimes to Tumbes and Sechura. The principal imports are cotton and woolen materials, Oregon pine, kerosene, lard, corrugated iron, ropes, rice, maize, sugar, butter, soap, stearine, candles, flour, matches, cloth, wines, tobacco, machinery, etc. The chief exports are—cotton of very coarse texture—(this is a speciality of this Department of Piura, and is mixed with wool in the process of weaving), cotton known as 'Egyptian,' cotton seeds, straw hats, hides, goat skins, coffee, fish, onions, carobwood, charcoal, fruits, etc., whilst from Talara and Zorritos are exported raw petroleum, kerosene and benzine.

The total quantity of cargo handled in Paita during a year amounts to about 40,000 tons. Paita is the chief port in the Department of Piura, and is sixty miles by train from the town of that name, and from which a railway runs to Catacaos, about five miles further. A special system of irrigation has recently been adopted on the farms abutting on the river Chira, and a well-known Liverpool firm is interested in this scheme. It is expected that very good results will be obtained during the present year.

The Petroleum Wells at Talara are being developed by the London and Pacific Petroleum Company and Messrs. Duncan, Fox and Co. The

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machinery cost something over £30,000, and the kerosene produced is of good quality, the chief obstacle to progress being the irregularity of the supply. The price is about 35 per cent. less than North American kerosene. The Zorritos wells, north of Talara and south of Tumbes, are also being worked, and tank steamers are employed by both wells to distribute the oil along the coast. There are also petroleum wells at Caleta Gran and Cape Blanco, but these are not at present being worked.

At Sechura, in the neighbourhood of Paita, there are salt mines, and the salt is considered excellent for household purposes. The Vichayel and El Negro salt pits are situated in the province of Piura, and the Zarumilla in that of Tumbes, and the salt from these places is carried on beasts of burden to Ecuador. Pearls are found in the bay of Sechura, and two companies have been formed to carry on the business of pearl fishing. Gold, copper, coal and sulphur are also found in the Department of Piura.

Tumbes is a small town of 1,800 inhabitants on the Tumbes River, and situated on the boundary line between Peru and Ecuador. It has a special interest, as some of the Indians from Tumbes were the means of conveying to Pizarro intelligence of the wealth of the Inca dominions, and it was near this town that the conqueror made his first landing in Peruvian territory. Pizarro had sent his pilot Ruiz ahead to the south on an exploring expedition, and he came up with a large 'balsa' having several Indians, both men and women, on board, some with rich ornaments on their persons

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besides several articles wrought with considerable skill in gold and silver, which they were carrying for purposes of traffic to the different places along the coast. But what most attracted his attention was the woolen cloth of which some of their garments were made. It was of a fine texture, delicately embroidered with figures of birds and flowers, and dyed in brilliant colours. He also observed in the boat a pair of balances made to weigh the precious metals. Two of the Indians had come from Tumbes, and they gave him to understand that in their neighbourhood the fields were covered with large flocks of the animals from which the wool was obtained, and that gold and silver were almost as common as wood in the palaces of their monarch. It was this information which gave new heart to Pizarro and his followers, and which hastened on the conquest. We regretted that our steamer did not call at the port, and that we could add nothing from personal observation to the description of Tumbez, or Tumbes, as it is now written.

We felt the heat very much as we approached the Guayas River, and saw for the first time for many days some clouds in the sky. These were the precursors of a violent thunderstorm, accompanied by heavy tropical rain, and the whole sky was illuminated by lightning of the most vivid and terrible kind. The sky seemed to be torn in pieces at times by the forked flashes, but it was none the less beautiful to watch. Whilst the rain was coming down in torrents, the incident of the old lady who had not seen rain for ten years occurred.

We were delayed at the bar of the Guayas River,

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off Puna, for some hours and indeed were aground for a time The town of Guayaquil (population 60,000), is about 28 miles from the bar, and forms the chief port of Ecuador. The anchorage is in 6 to 8 fathoms and there is a mean rise and fall of tide of about 10 feet. The port is two-and-a-quarter miles long, with a fine stretch of quays, extending for over one-and-a-half miles. A few years ago a large part of the city was destroyed by fire, and as the result, the city has been much improved—substantial and ornamental buildings having been erected in place of the old wooden ones. The houses, we were told, are infested with opossums—a species of large rat.

S. E. LEONIDAS PLAZA GUTIERREZ,
President of Ecuador,
1901 1905.

Cargo is discharged from vessels at anchor in the stream into iron launches, at the rate of 400 to 600 tons per day. The launches range in capacity from 50 to 100 tons.

There is a large import and export trade. The principal article of export is cocoa. Other articles are indiarubber, coffee, hides, Peruvian bark, ivory nuts, etc. There is also a large fruit trade with the southern Republics. The exports amount to about 35 000 tons per annum, and the imports to 40,000 tons.

A railway intended to reach Quito, which starts from Duran, on the east side of the river and fronting the city, was completed on the 8th September, 1902, as far as Alausi, 7675 feet above sea level, and within fourteen miles of the Palmira Pass, which is the summit

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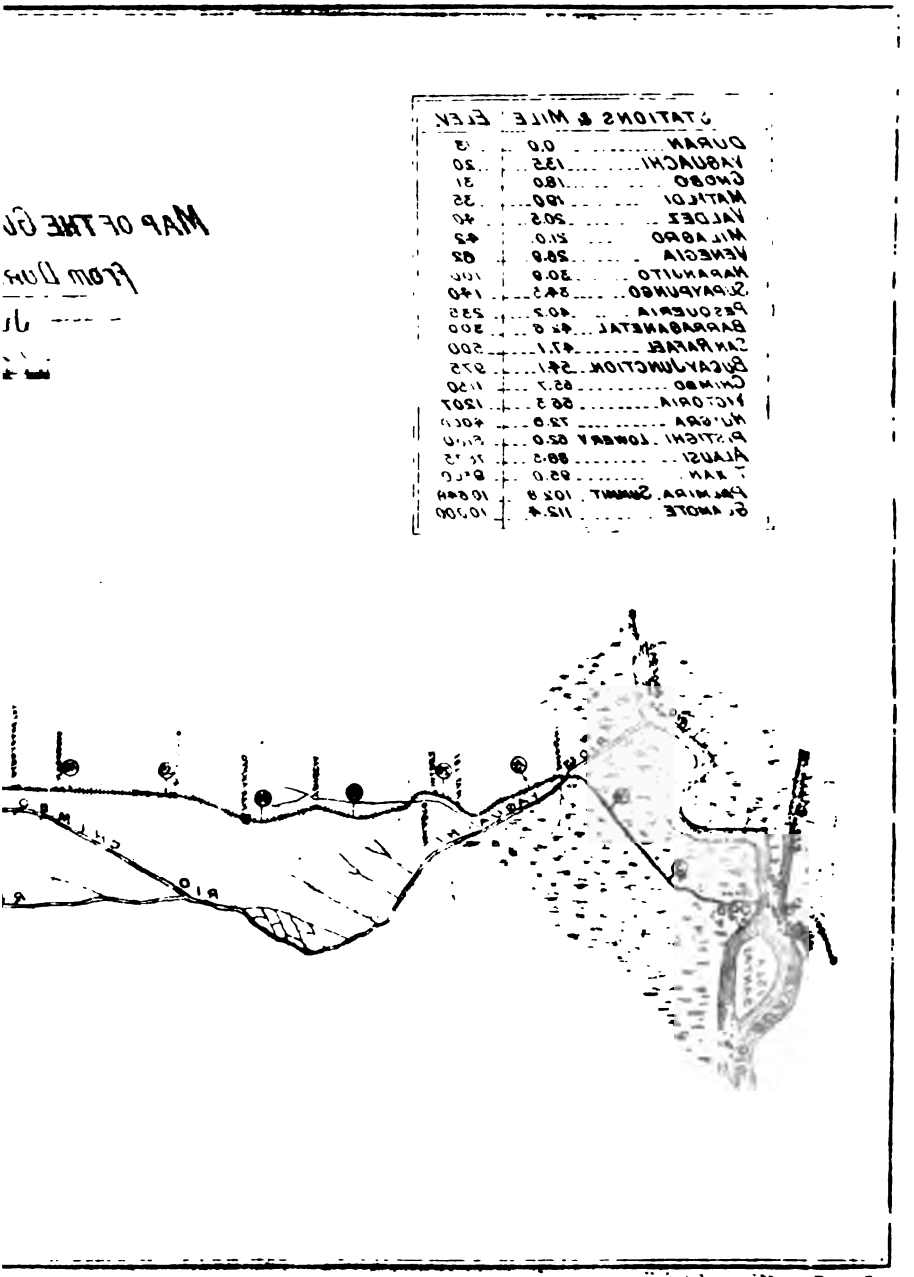

Philip Son & Nephew, Ld. Liverpool

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of the Andes. Since that date the track from Alausi to Guamote—say twenty-six miles further—has been completed, and the railway now commands the trade of the interior of Ecuador. Four miles beyond Guamote is Columbe, where excellent coal has been found.—See Chapter IV.

There are no important towns in the vicinity of Guayaquil. River steamers ply up to Bodegas, and in the rainy season, when the rivers are very high, for nearly a hundred miles further through the finest cocoa orchards of the country.

The gold standard has been adopted in Ecuador. The only gold coin is valued at 10 sucres = £1. British gold coins are also declared legal tender throughout the country. The Banks of Ecuador and Comercio y Agricola issue notes of 1, 2, 5, 20 and 100 sucres, all changeable at par for gold. The exchange varies between 1s. 11½d and 2s. 1d. per sucre.

As our business in Guayaquil occupied only a short time, and there were no means of proceeding on our journey for several days, we arranged an alligator shooting expedition for two days up the river, in company with several friends. After providing ourselves with the needful guns and provisions, we started on board the small paddle steamer 'Puigmuir' for Babahoyo or Bodegas, the highest point up the Rio Grande to which the steamer runs in the dry season. From this place traffic for Quito goes by mule. Babahoyo is 60 miles up river, and the steamer makes about eights knots per hour. The journey was extremely enjoyable, and more tropical than anything

NOTE.—The Guayaquil and Quito Railway is now open to Ambato, and the extension to Quito, it is thought, will be made in 1908.

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we had experienced on the Pacific Coast. Coffee and cocoa plantations lined the river banks, and there were numerous cokernut palms and forests of beautiful trees to be seen, sometimes presenting the appearance of an English park, whilst at others, where the plantain and banana plants, huge pines and great trees covered with blooms appeared, that of a rich tropical country. Beautiful mango trees, with the fruit hanging in reddish coloured balls, offered the most delightful shade along the river margin, and the landscape was beautified by the Madera Negra or Iron tree looking like a huge yellow bouquet, and the Bread-fruit and Immortelle trees. Dug-outs shot out here and there from the rude habitations on the banks, each propelled from the stern by an Indian with a short paddle—his wife (presumably) being meanwhile engaged in preparing a meal in the centre of the boat. Other boats were laden with fruits, and now and again large bamboo rafts passed us on their way to Guayaquil for conversion into furniture and a hundred other things. The bamboos seen along the banks looked like tremendous bright green ferns. We were much interested, also, in the floating islands, covered with trees and undergrowth, which frequently passed us, being carried down stream by the strong currents Showing on some mudbank, with jaws wide open, or swimming up, down and across the stream, were numerous alligators, so there was plenty to interest us besides the luncheon basket. For instance, there were thousands of mosquitoes and other vicious 'bichos,' and we soon put on the appearance of Christmas

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plum pudding. Personally I was good for one hundred bites, and clothes seemed to offer very little obstruction to the ravages of these insects.

We were much tempted to shoot at some beautiful blue and white herons which flew across our bows, but were persuaded as we could not recover the birds, to preserve our ammunition for later opportunities, and we very soon had our work cut out for us. After ascending the river about 30 miles, we got into the bows of the boat with our firearms and were soon busy. To our unaccustomed eyes the alligator looked, in the water and out of it, just like a log, but with the aid of a glass we were able to distinguish the reptile until we got accustomed to it, and could find it readily with the naked eye. The alligator is very sharp, and as soon as it hears the splash of a boat or the report of a gun, or sees you with one of its four eyes (two for land use and two for the water), it disappears from the river bank or the surface of the river like a flash of lightning. The first alligator, by a lucky shot, fell to my Winchester. It was a huge beast, about eleven feet long from tip of tail to nose. It was on the bank at a distance of about 100 yards, and the shot struck it under the forearm in the most vital spot. It just quivered and died. The next, also a large one, was struck by one of my fellow-travellers, and although mortally wounded, it managed to drag itself from the bank to the water. We saw its carcase next day floating in the stream.

We then came to the small town of Zamborondon, on the left bank of the river, and quite a crowd of natives came down to sell rice and milk, native cheese, fowls,

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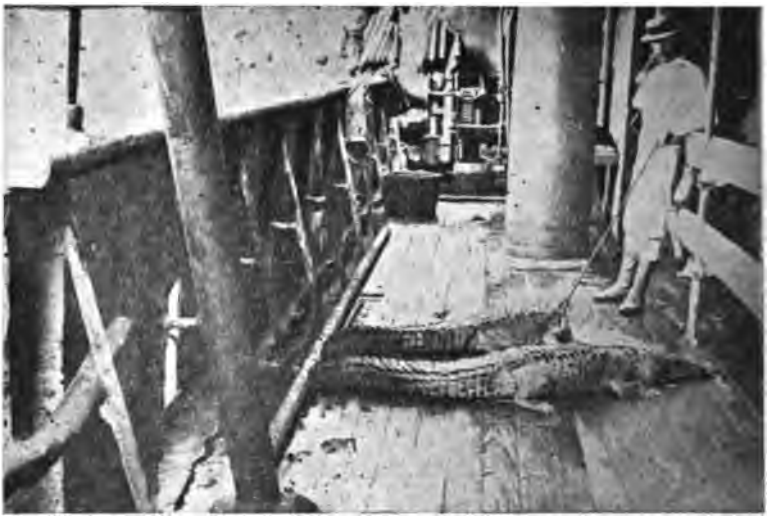
cakes, etc. The houses along the river are all built on piles as it frequently overflows in the rainy season, and they have the appearance of large pigeon cotes. The



ALLIGATORS.

family live on the top story, and get up by means of ladders. When the water is high they can get in straight from the 'dug-outs.' The piles are made from the iron tree, which is so hard that it is only with great difficulty that a nail can be driven into it. The roofs of the huts are thatched with Bijao leaves turned upside down. These leaves are very large and water-proof. We were not successful in hitting any more alligators, as they were too fast for us. At last we arrived at Babahoyo, and after ordering dinner at the 'Posada,' we hired a large canoe, and with three natives to steer and paddle, we went up some of the creeks and minor rivers. The first shot we got was at a large iguana which was

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regaling itself on the top of one of the trees. It came down with a great thud, shot through the head. It was a very ugly looking reptile, of the lizard type, about 4½ feet long, though the tail accounts for more than half the length. We got another about three and a half feet in length shortly afterwards, and bagged quite a number of smaller ones. We then got on the track of some alligators, but they were too shy of us, although our Indians paddled the canoe along almost noiselessly. A large sized 'chuque,' however, flew across our bows and paid the penalty. The Indians were loud in their exclamations of astonishment and admiration at seeing a bird shot on the wing. We took some of its greyish green plumes as trophies and then tried for some splendidly plumaged kingfishers which put in an appearance, but we had no further luck. As night was coming on, we made for Babahoyo, very well satisfied with the sport we had had. On our way back in the dark—for there is scarcely any twilight here—we were much interested in watching the fire-flies dancing about, in and out, and over the trees and the fields, sparkling like small stars—two or three twinkles and then out—like some fairy 'will o' the wisp' playing at hide-and-seek.

After dinner we rigged up an oil lamp on the deck of our boat and played 'bridge' until we were tired out. Never have I seen such quantities of insects—there was a constant stream from the lamp, which was the attraction, and our table at times was completely covered. Then we dropped into our hammocks in our clothes and were soon asleep, nothwithstanding the

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mosquitoes and the strangeness of our resting-place. The hammocks were swung along the deck, and the night air kept us cool. It requires some experience to sleep in a hammock, as one may very easily tumble out, but once a comfortable position is secured, everything is all right. Before getting so far, however, I turned a beautiful somersault, to the amusement of our party. Next morning we were up at six, and the boat started on the return journey. There were plenty of birds to be seen, chuques, wild pigeon, hawks, turkey buzzards, and wild duck, and a number fell to our guns, but as they tumbled into the adjoining marshes we were unable to get them. We had also a good deal of practice at alligators, but so far as we could see, no success. A thin streak across the water would usually mark the tracks of an alligator, but it was a flimsy mark to fire at, and the least noise was sufficient to cause its disappearance.

In due course we arrived back in Guayaquil. Off the city the river is quite a mile wide and is rapid and muddy from its mouth to within sight of the town, the banks being lined with mangrove swamps. We got a splendid view whilst up river of Chimborazo (21,424 feet) as Prescott says, 'with its glorious canopy of snow 'glittering far above the clouds, and crowning the whole 'as with a celestial diadem,' and were sorry that we could not take mules from Bodegas to Quito, the Capital of the Republic. It has about 70,000 inhabitants, possesses many fine buildings and is said to be one of the most interesting cities in South America. The plains of Quito are at the height of between nine and ten

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thousand feet above sea level, and the temperature is from 50° to 62°. Quito was formerly under the domination of the Incas, and played a part in the history of Pizarro.

Of the ports of Ecuador—Guayaquil, Puerto Bolivar, Manta, Bahia de Caraquez, and Esmeraldas are classified as major; and Ballenita, Machalilla, Cayo, and Limones as minor.

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CHAPTER XXVII.

COCOA. PUERTO BOLIVAR. MACHALA. BALLENITA. SANTA ELENA. "BILANDRES." MACHALILLA. "BONGAS." MANTA. PANAMA HATS. TAGUAS (IVORY NUTS). PORTO VIEJO. MONTECRISTI. JIPIJAPA. SANTA ANA. CERRO DE HOJA. BAHIA DE CARAQUEZ. SEA SNAKES AND MANTAS. FISHING FOR CIERA AND ALBICORE. ESMERALDAS. TREATY OF COMMERCE BETWEEN ECUADOR AND CHILE. COLOMBIA. CURRENCY. CAPTURE OF A SHARK. TUMACO. BARBACOAS. BUENAVENTURA. CALI. BOGOTA. GULF OF PANAMA. ISLANDS OF FLAMENCO, TABOGA, AND MORRO. PINEAPPLES. GIANT LOCUSTS. MAJOR AND MINOR PORTS, COLOMBIA. RAILWAYS, WEST COAST.

NATURALLY, we must say something respecting cocoa and tagua (or ivory nuts), which products form the staple exports of Ecuador and the adjoining Republic of Colombia. The street in Guayaquil facing the river was in part blocked with quantities of cocoa nibs, which were drying in the sun preparatory to being bagged, and there was a constant shovelling and riddling of the nibs going on to improve the quality. On our way down from Babahoyo we landed at one of the stations at which the boat called for its timber fuel, and went into a cocoa orchard to inspect the pods. One of these was cut open for us with a 'machete,' and, beneath the leathery rind, a reddish soft pulp or marrow was revealed, which was separated into five cells containing rows of seeds. The seeds are from half-an-inch to an inch in length, reddish brown in colour, and their oily, aromatic, bitter kernel is of a thin, pale, reddish brown, surrounded by a brittle seed shell. The pods, after being cut in halves, are allowed to ferment for a few days, during which the beans or

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seeds become browner in colour, and lose their bitter herb taste. The seeds are then separated from the pulp, washed and spread on trays to dry, and after sorting, are packed in bags or baskets for shipment.

The cocoa tree (*theobroma cocoa*) is indigenous to Tropical America, and grows wild in many places. Its culture was known, according to Humboldt, in Mexico in the days of Montezuma, and it was there the Spaniards first became acquainted with it, and transplanted it to the Canary and Philippine Islands. The Mexicans prepared a drink named 'Schocolatl' in which was mixed maize meal, vanilla and cocoa. They even understood in those early days how to prepare the chocolate in tablets, and as the machinery for grinding was obtained in Europe, the word 'Chokolatl' became known there. In Spanish America chocolate is not looked upon as a luxury, but as one of the first necessaries of existence. The cocoa plant, like the coffee tree, requires great protection in its infancy, and it is not fully productive until it is about 12 years old. Those we saw were surrounded by Immortelle trees or 'Madre de Cacao,' as they are called. These, when in blossom, look charming in contrast with the cocoa plant. The cocoa tree grows to a height of from 20 to 40 feet, and has long oval pointed leaves which are smooth on both sides. The cocoa pod is from 6 to 8 inches long, 3 to 3½ inches thick, five cornered with ten furrows, somewhat uneven in shape, and of a dirty citron yellow colour, except when it is reddened by the Sun. The fruit is collected from cultivated trees twice a year, varying according to the locality, from February

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to June and from August to December. The beans, when dried, will only keep for about a year in South America, though in Europe, if well packed and stored, they will keep for three years. The chief ingredient (50 to 56 per cent.) makes a solid fat oil known in commerce as cocoa butter, and used as a salve.

Naturally, the colour, quality and shape of the cocoa bean varies according to the different methods of cultivation and the care exercised in protecting the plant from its numerous climatic and parasitic enemies.

Chocolate factories have been established in Ecuador, and are doing excellent business.

No recent statistics of the cocoa crop of Ecuador have been published, but in 1898 the total amounted to nearly 19,000 tons, which is much in excess of any previous year. The value of this cocoa is set down as £1,320,237. Cocoa weighs 40 lbs. to the cubic foot. India rubber takes the second place in value in Ecuadorian exports, the figures for 1898 being £93,340. The quantity was 9,334 quintals. The value of ivory nuts shipped in the same year amounted to £23,080, the quantity being 115,400 quintals. The rubber goes principally to the United States.

We propose now to proceed with our journey, and to treat of ivory nuts (the fruit of the vegetable ivory plant), when we reach the port of Manta.

We called at Puerto Bolivar after leaving Guayaquil for a quantity of cocoa and ivory nuts, but, unfortunately, our arrival was preceded by heavy rains, so that the road from the port to the town of Machala was almost impassable, and there was nothing to

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gain by landing. The heat was almost unbearable, but some of the young negroes brought green cokernuts on board, numbers of which we could see on the palms growing close to the water's edge. The water or juice from a green cokernut is considered to be extremely refreshing on a hot day, though the flavour seemed to me to be somewhat sickly. Cokernuts notwithstanding, we were glad to weigh anchor and proceed for Ballenita, a small port north of the entrance to the Gulf of Guayaquil. Ballenita consists of a few huts only, but the town of Santa Elena, for which it is the outlet, is only two miles distant. There are various salt mines in the vicinity, and that article forms the chief trade with the neighbouring Ecuadorian ports. The cargo is brought off in what are known there as 'bilandres'—a kind of sailing launch—and that for our steamer consisted of ivory nuts, straw for making 'Panama' hats, and straw hats packed in skins. The discharge and loading operations at these small ports were always interesting to watch. The ship was invariably surrounded by natives in their 'dug-outs,' though the attentions of the 'pugas' (insects) and mosquitoes made us long to report progress once more.

We arrived at Machalilla late on the evening of the 28th of January, and although the Authorities received the ship, they would not allow cargo to be discharged. We had, therefore, to wait until six o'clock next morning before commencing work. The cargo, at this small surf port, comes off in 'bongas,' which are 'dug-outs,' built up about a foot, and carry 25 bags of ivory nuts each. Loading was finished at ten a.m., and we

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then steamed away for Manta, where we arrived at 3 p.m. The town looked interesting from the ship, and as we were promised some information respecting the straw-plaiting industry which thrives there, as also the business done in taguas, we determined to run the risk

LOADING TAGUAS, MANTA.

of the surf and go on shore. As our boat neared the beach, quite a number of natives rushed out into the surf to meet it, and, watching their opportunity, seized us and ran for the shore. This they succeeded in gaining before the next wave came in, and we escaped a wetting. Proceeding to a hat factory, we were soon initiated into the mysteries of the famous Panama. These hats are made entirely by hand. The crown is made first and when this is ready, or even only a small

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portion of it, the workman negotiates for his price, which varies according to the fineness and regularity of the work, and the time which it is estimated will be taken to complete the hat. The crown of the hat is placed on a wooden stand. The workman presses his chest on this, and thus holds it in position, leaving his hands free for plaiting. The better kinds of hats are only made during certain hours of the day, when the straw is more pliable, and some descriptions or qualities are worked with the straw entirely under water. We saw some which were priced at £10 apiece, but others bring more than double that sum. The price is not thought high, as the quality of the hat is often the only mark of superior station in these tropical districts. The hat practically lasts for ever, and is willed from father to son. The large number of straws used in plaiting is simply confusing to the uninitiated. Cheap hats, of course, are made in great quantities and are very durable. We noticed Indians on the Guayas River taking their hats off, fill them with river water, which they would drink, and then replace the hats. We next went to see some natives dressing ivory nuts. These grow in large bunches or clusters on a species of palm tree, much darker in the leaf than the cokernut palm. The nuts are usually close to the ground, and it is said that they sometimes grow beneath the surface. Each nut contains six or eight kernels, and these, when green, are eaten by hogs and birds and, I suppose, by monkeys. The nut is what was known in my school-boy days as 'monkey's cokernut.' When hard and dry they are beaten apart, as shewn in the illustration, and

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as far as it is possible, with the limited labour available at Manta, the nuts are cleaned of the husks. The taguas are then bagged in 200 lbs. sacks and shipped to Germany or France, where they are sliced and made

CLEANING TAGUAS.

into buttons and other articles. Tagua takes an excellent polish, and has the appearance of genuine ivory.

Then, as we made for the beach, we found a number of half-naked men on our track, waiting for the opportunity to pick us up and rush out through the surf to the boat. This was successfully accomplished, but the sensation of being at the mercy of these men was not altogether pleasant, although, to judge from

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their appearance, there was no occasion for fear. We saw them later loading 'bongas,' and up to their necks in the sea.

The principal towns in the vicinity of Manta are Portoviejo, the Capital of the Province, 40 miles distant; Montecristi, 9 miles distant; Jipijapa, and Santa Ana. These are chiefly occupied in the straw plait industry. The Cara tribe of Indians used to hold sway over this district, and a relic of their times is to be seen at Cerro de Hoja, six miles north of Montecristi. It consists of a table and a number of chairs hewn from solid blocks of stone, and placed in a circle on the summit of a flat-topped hill. The table is said to weigh 40 tons.

The next port called at, Bahia de Caraquez, is 31 miles north of Manta, but the town is not visible from the anchorage, and we did not land. The whole district looked beautiful after the recent heavy rains. After taking on board a small quantity of cocoa from the native 'bilandres,' we weighed anchor and steamed for Esmeraldas. Leaving Bahia we were surprised to see a great number of sea snakes of a streaked yellow and black variety, and also one or two mantas (a large flat fish) jumping out of the water, and coming down with a great splash. There were also plenty of flying fish, which, frightened by our approach, made for a change of locality. The sea got up somewhat as we approached the Equator, and the sky looked very threatening. It was just about 6 p.m., when we crossed the 'line,' and the captain was asked jokingly if old Neptune was expected. Before he had time to reply one of the boys

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came running towards us crying 'pescado' (fish). We at once ran to the stern, where we had two strong rope lines, baited with white rag, towing, and we found that old Neptune had at all events sent his respects just at the right moment, in the shape of a huge 'ciera,' or kingfish, weighing about 60 lbs. It took three men to get it safely on board, and the order was given to put off the dinner for half an hour. The fish made a great splatter as it was landed on top of the hatch, and it lived for some time after our steak had been taken from its tail, and it had been struck on the head with a hatchet and cut open. The heart throbbed for fully ten minutes after it had been separated from the body, and we were told that a shark's heart, hung up, would throb until sunset, a statement we determined to test on the first opportunity. The 'ciera' was boiled, and turned out beautifully white and very good. It is one of the best fish found in these waters. After dinner I went to try our lines in case Amphitrite had also sent us a token of regard, and certainly one of the lines felt as if it was attached to a buoy sinker. It was more than one man's work to draw the line in, so I called out for assistance. The fish was not anything like so game as the 'ciera,' but possibly it had been on the line for some time, and was half drowned. It was, therefore, quickly drawn in and hauled aboard, when it was found to be a huge 'albicore,' about 70 lbs. in weight. It is a most beautiful fish to look at, being brilliantly coloured, but its flesh is brown, and not nearly such good eating as that of the 'ciera.' The crew preferred it, however, to meat, and so it was passed along to them.

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We arrived at Esmeraldas, the northernmost Ecuadorian major port, without further incident. It is prettily situated close to the mouth of the river. The steamer anchored well outside the bar, as it is a very dangerous one, the river being rapid. We saw a good example of the danger before we had been five minutes at anchor, as a canoe with seven negroes who were coming off to the ship, filled at the rapids and capsized instantly. The negroes, however, are quite like fish in the water, and they treated the matter as a joke, holding on to all that belonged to them, even the submerged boat. One man who was smoking a cigar when he went down had it still between his teeth when he came up again, and as two large boats put off to the rescue, he brought it on board with him. Capital cigars are made from native tobacco at Esmeraldas,—at least the tobacco is excellent; there is room for improvement in the making.

The exports consist of ivory nuts, rubber, cocoa, coffee and gold dust. From 250 to 300 tons of cargo, which comes off in sloops and canoes, can be dealt with in a day at the port. The quantity of cargo exported to Europe and the United States in a year amounts to about 6,000 tons, and the imports, local and foreign, are less than 1,000 tons.

The town of Esmeraldas has about 4,000 inhabitants, and it took its name from some emerald mines which formerly were worked in the neighbourhood. There are several gold mines in the Cachair, Santiago and Cayapas districts. Two North American gold miners who had lost a companion crossing the river on

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the way down from the mountains, joined our ship, but they did not appear to have had much success in the search for gold. They found great difficulty in getting provisions, but seemed to think that a properly equipped party, with good mining tools would do well.

A treaty of commerce between Ecuador and Chile exists, under which Chile admits free of duty Ecuadorian sugar, coffee, tobacco and certain other articles, and Ecuador admits flour and wines from Chile at half the usual duties, and other articles entirely free. I am not certain, however, whether this is acted upon, owing to conditions of transport which have been imposed.

A revolution had broken out in Colombia, and as one of the Pacific Company's steamers a short time previously had been fired upon and hit by the revolutionists, and the captain had by a mere chance escaped the addition of a little lead to his anatomy, we approached that interesting Republic with somewhat mixed feelings. Fortunately, as I now write, the revolution, after several sanguinary encounters, the sinking of a Chilian steamer and sundry other disasters, has been brought to an end, and the country is again awakening from the state of commercial paralysis which was but the natural result of the disturbed state into which the revolution had thrown it. The currency of Colombia

S. E. DON JOSÉ MANUEL MARROQUIN,
Vice-President of the Republic of Colombia, in charge of the Executive power.
1904.

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is paper, and naturally its value suffered largely through the struggle for supremacy in the country making business difficult and risky.

Colombia has a coast line of 3,400 miles, of which 1,600 are on the Pacific and 1,800 on the Atlantic Ocean.

We were bound for Tumaco, and if we had any fears, they were soon to be dispelled. We were much interested when approaching the port in watching the antics of a school of porpoises which played around our bows for a time, and then forming themselves into a row, swam in a straight line in front of the steamer for at least half a mile, their tails appearing at times to touch the ship. The sea seemed to be quite alive with snakes and large red crabs, and we tried to catch some of them with a line from the stern, but unsuccessfully. The rainy season had commenced, and we soon had some further experience of tropical showers or deluges, as they might more correctly be termed. Tumaco cannot be entered at all times of the tide, and as we arrived before the tide suited, we came to an anchor outside. All round the ship we could see huge sharks watching for any savoury morsel which might be thrown overboard, and we thought the opportunity was too good a one to miss. Getting our large wire line, with the double hooks and a good-sized piece of pork for bait, we made the line fast to a stanchion, and then commenced to tickle the sharks with the bait. A few minutes sufficed, as it was early morning and the sharks were evidently hungry. Hauling on to the line we pulled to the surface a fine specimen of the

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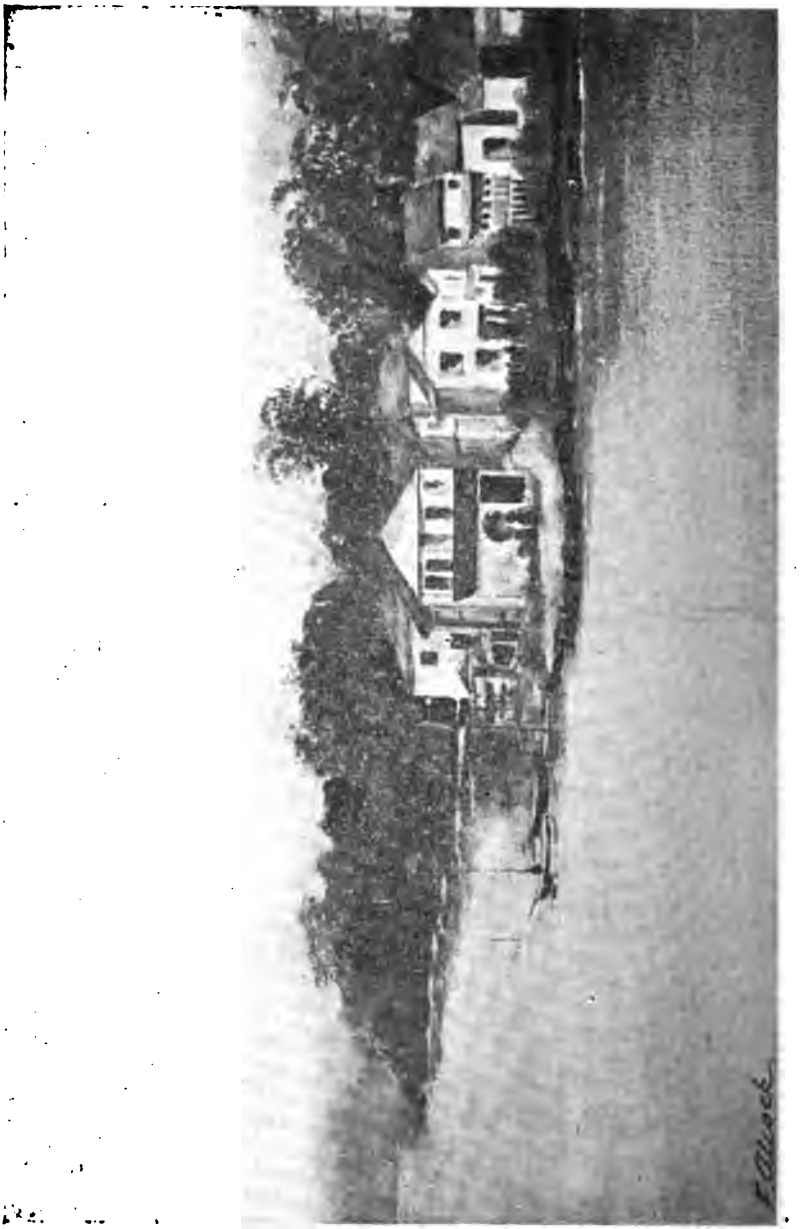

TUMACO.

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'tintorera' shark. Naturally we could not hold it there without risking line and hooks, so we let it run and called for help. After tiring the fish somewhat and giving our friends time to get a rifle, we again pulled the fish up to the surface and held it there until three rifle bullets had been put through it, and its struggles were over. Some of the sailors then drew the shark round to the hatchway, and fixing a rope beneath it, it was hauled aboard and cut open. It measured eight feet from tip of tail to nose, and weighed something between 200 and 300 pounds. There was nothing special in its 'bag,' but before throwing the carcase overboard we had the heart cut out to try the experiment previously referred to, and also the backbone and jaws. Walking sticks are sometimes made out of the backbone by running a thin iron rod through the centre, and then enamelling the whole. His Gracious Majesty King Edward, we believe, has a specimen of the kind among his collection of rare and valuable sticks. The shark had only three rows of teeth, so that it was a young one, though, as one of the worst kind of man-eating sharks, it would not have been pleasant to meet it in its own element. Its heart, hung from the rail, continued to beat for two hours only, a long time from sunset.

As the tide had now come in, we weighed anchor, and proceeded through the channel round the Island of Morro to Tumaco. The passage was simply beautiful, the water being as placid as a lake, and the banks all round clothed with rich tropical vegetation. The town reminded me of pictures I had seen of the West

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Indies. The photos of the streets and natives will give some idea of the place, though the local charm of colour is absent. The town has a population of

STREET, TUMACO.

about 1,000, consisting chiefly of coloured people; and the houses are for the most part built of bamboo and thatched. Those near the water were on piles.

STREET, TUMACO.

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RISING GENERATION, TUMACO.

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There were a number of soldiers about the place, each dressed, it seemed to us, as the fancy took him. These were in charge of the town. Some of the houses were riddled with bullets, and the occupants had been compelled in many cases to protect themselves behind ivory nut bulkheads. Anything will grow in Tumaco. The place is simply rank with vegetation, and it does not bear a good reputation from a health standpoint. The chief exports are gold dust, rubber, ivory nuts, cocoa, coffee and lumber. Communication with the interior is carried on by horses or mules. Barbacoas, a town of 4,000 inhabitants, distant two days' journey, is the centre of the gold mining district, and is reached by steamer.

Our next port of call was Buenaventura, population 1,200, at the mouth of the Cauca Valley, and one of the chief ports of Colombia. Unfortunately, yellow fever and smallpox were reported as prevalent in the town, and we, therefore, remained on the ship. A railway is being constructed from the port to Cali, 75 miles distant, and in the centre of the Cauca Valley. The exports from Buenaventura are practically the same as from Tumaco. Bogotá, the Capital of the Republic, is reached through this port and Cali, and the journey thither is a very difficult one. The Capital has an excellent reputation for its fine climate and situation (9,000 feet above sea level), and also for its beautiful buildings.

The passage from Buenaventura to the Gulf of Panama was a rather unpleasant one, the heat being terrific and the sea high. We were charmed, however,

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with the Gulf, dotted with innumerable islands, and looking like a soft dreamy picture in the morning sunlight. There was plenty of life visible in sea and air in the shape of whales, porpoises and pelicans. After

FREAK OF NATURE, TUMACO.

dipping our ensign to H.M.S. 'Phaeton,' we came to an anchor off the Island of Flamenco. Leaving the steamer, we sailed over to the Islands of Taboga and Morro,—the latter the property of The Pacific Steam

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Navigation Company. There are good springs on Taboga Island, and the steamers get their supplies of fresh water from this source. At the Morro Island there is a gridiron, which can be used for vessels of a fair size. Both islands are well wooded, and Taboga Island produces an abundance of fruits, such as pine-apples, mangoes, tamarinds, paltas, etc. One of the natives cut several pines in order to show us the correct way of eating them. It was very simple, and whilst not elegant, certainly the full flavour of the naturally ripened pineapple was preserved. The rind was first hewn off with a 'machete,' and the pine split down the core into quarters, which were then eaten like an apple. The flavour was simply perfect, and as the temperature on the island was something over 90 degrees, it is superfluous to say that the repast was refreshing. Whilst we were thus pleasantly engaged, we were startled by some giant locusts, beautifully coloured, and known as crabs, which flitted hither and thither among the trees. Having secured one of these as a specimen, we left the island and proceeded to La Boca Wharf, at Panama, a distance of about 16 miles, arriving there without further incident.

The principal Colombian ports on the Pacific are :—Panama, Buenaventura, Tumaco, Agua Dulce, Sona, and Pedregal.

The railways on the west coast of South America are:—

PANAMA.—Panama Rail Road Company's line between Panama and Colon—47 miles long. Trains take two, three, and four hours. Passenger train runs in about two and three-quarter hours.

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BUENAVENTURA TO CORDOBA.—About 21 miles.

,, ,, CALI.—75 miles under (construction).

GUAYAQUIL TO QUITO.—(Under construction.) See Chapter XXVI.

PUERTO BOLIVAR TO MACHALA.—3 miles distant.

PAITA.—There are two railway lines—one wide gauge from Paita to Piura, Capital of the Department—62 miles in length. The other rail road—narrow gauge—from Piura to Catacaos, is 6¼ miles in length. The first of these railways passes the chief towns and estates on the River Chira.

PIMENTEL TO CHICLAYO.—8¾ miles.

ETEN TO FERRANAJE AND PATAPO.—48½ miles.

PACASMAYO RAILWAY TO THE INTERIOR.—Two branches from the junction of Calasñique, 9¾ miles from the port. One—the more important at present — to Guadalupe, in a north-easterly direction, is 26½ miles from Pacasmayo, the other to Paypay, in an easterly direction, 28 miles. There are schemes in project to extend these lines inland to Hualgayoc, Cajamarca, etc., and to a navigable point on the Maranon River, also northward to the Zana Valley, and southward to the Chicama Valley.

HUANCHACO TO TRES PALOS.—23 miles.

SALAVERRY.—Railway from this port to Trujillo and Ascope, the latter place being 47½ miles distant from Salaverry, with branch lines to sundry estates.

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CHIMBOTE TO SUCHIMAN.—32 miles.

SAN NICOLAS TO PUERTO SUPE.—3 miles.

CALLAO TO MATUCANA, CASAPALCA, AND OROYA.—See Chapter XXV. Callao to Lima, about 8 miles. Lima to Ancon, 23½ miles. Lima to Chorillos, 9 miles. Callao to La Punta, 2 miles. Lima to Magdalena, 5 miles.

TAMBO DE MORA TO CHINCHA ALTA.—6¼ miles.

PISCO.—Railway to Ica, 46 miles to the south-east.

MOLLENDO TO AREQUIPA, 107 miles, and thence to Puno, 218 miles. This railroad, belonging to the Peruvian Corporation, attains an altitude of 14,666 feet above sea level. From Juliaca, the station just preceding Puno, and 118 miles from Arequipa, the Cuzco Railway runs to Sicuani, 124 miles. From this point the traveller proceeds to Cuzco on mule or horse-back. Passengers for La Paz (Bolivia) go as far as Puno, where they remain overnight, and travel by steamer next day to Chililaya (Lake Titicaca). From Chililaya to La Paz, by coach, occupies from five to six hours.

The route via Chililaya seems destined to die out, as a new railway is being built from Guaqui, on the margin of the lake, which will run right into La Paz, and shorten the journey from Mollendo by about 24 hours. A railway is in project from La Paz to the fertile district of Yungas, where excellent coffee is grown.

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ARICA TO TACNA.—A line is also projected from Tacna to La Paz.

PISAGUA NITRATE RAILWAY COMPANY'S LINES connecting with Iquique and the various nitrate oficinas.—See plan.

JUNIN.—Inclined railway to the Alto, and a line across the Pampa to Dolores. See plan of nitrate district.

CALETA BUENA.—Agua Santa Nitrate and Railway Company's line to the Alto (Caleta Buena).

IQUIQUE.—Nitrate Railway Company's line to Pisagua, etc.—See plan.

ANTOFAGASTA TO OLLAGUE, 276 miles. OLLAGUE TO ORURO, 580 miles.—The Antofagasta to Bolivia Railway runs into Bolivia as far as Oruro, stopping at the principal towns *en route*, and at all the mining centres. A light railway was opened about three years ago in the Chuquicamata mining district. It starts from Chuquicamata, and, after a run of 8¼ miles, connects at Calama (the chief mining centre of the interior) with the Antofagasta and Bolivia Railway. Another line was opened about two years ago connecting the Aguas Blancas nitrate fields with the port of Antofagasta. Several other branch lines are projected.

TALTAL.—Taltal Railway Company's lines—main line to Cachinal is 92½ miles long, and branch lines run to the Santa Luisa, Lautaro, Atacama, and Julia Nitrate Oficinas.

TOCOPILLA.—Anglo Chilian Nitrate and Railway Co., Ltd., running to Santa Isabel, Peregrina, Buena Esperanza, Iberia and Santa Fé—distant 50 to 60

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miles. Some extensions of this railway are in contemplation.

CHANARAL TO SALADO AND PUEBLO HUNDIDO, 50 miles. CHANARAL TO LAS ANIMAS, 19 miles. The line is being extended to Inca del Oro and Los Pozos.

CALDERA TO COPIAPO, Chanarcillo, Puquios and San Antonio.

CARRIZAL TO CERRO BLANCO, and Yerba Buena.

HUASCO TO FREIRINA and VALLENAR, 10 and 30 miles distant respectively.

COQUIMBO TO LA SERENA, also to SAN MARCOS.

,, OVALLE.

,, RIVADAVIA (under construction).

TONGOY TO OVALLE (under construction).

VALPARAISO TO SANTIAGO, CONCEPCION, and TALCAHUANO, and also in connection with the Transandine Railway to Buenos Aires.

CORONEL TO LOTA and CURANILHUE (Arauco Railway Company).

LOTA TO CONCEPCION, 30 miles.

TOME.—Line projected to Chillan and Concepcion.

VALDIVIA TO LA UNION, TRUMAG AND OSORNO.—See Chapter XX.

NOTE.—A number of new Railways are projected, the principal of which are the Electric Railway between Valparaiso and Santiago and a Railway from Quinteros to connect with the Santiago system.

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CHAPTER XXVIII.

PANAMA. BALBOA TAKES POSSESSION OF PACIFIC FOR KING OF SPAIN. OLD PANAMA. LA BOCA WHARF. RAILWAY TO COLON. PANAMA TRADE. ISTHMUS THROUGH TRAFFIC AND CONNECTING ATLANTIC LINES. PANAMA SHIP CANAL. BAY OF PANAMA. THE FINAL YARN. EXPEDITION TO CHIRIQUI PORTS. DEPARTMENT OF PANAMA. AGUA DULCE. LEONE ISLAND. PORT MUTIS. SANTIAGO DE VERAGUAS. RIDE TO SONA. PRIMITIVE SUGAR ESTATE. SONA. RETURN BY "DUGOUT." REMEDIOS. SPORT AT PEDREGAL. CITY OF DAVID. CONCLUSION. DEDICATION.

PANAMA was founded by Don Pedro Arias de Avila, or Pedrarias, one of the Spanish Colonial Governors, in the year 1519. He was previously established at Darien, but, finding the town unsuitable for prosecuting expeditions on the Pacific, and acting on a suggestion made by Valien Vasco Nunez de Balboa, transferred his capital to what is now known as Old Panama, and which is some distance east of the present city. It was Balboa, who, armed with sword and buckler, waded out into the waters of the Bay of Panama in the year 1513, and took possession of the vast Pacific, or to use the words of the historian Herrera, 'he claimed this unknown sea, with all that it contained, for the King of Castile, and that he would make good the claim against all, Christian or infidel, who dared to gainsay it.' Little did he imagine the full meaning of his words, or know of the shores washed by this magnificent ocean, of the islands and the pearl treasures it contained, or of the precious metals and gems of untold value which the bordering lands concealed. We had read of the exploits of the old Spanish warriors, of the interesting though violent

NOTE.—The State of Panama declared its independence on 3rd November, 1903, and a strip of land between Colon and Panama, 10 miles wide, embracing the Canal route, was acquired by the United States in 1904.

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deeds of Buccaneer Morgan, and of the many schemes for making a waterway across the Isthmus, and we naturally looked forward to our visit with that feeling which historical and romantic association ever engenders.

The ruins of the old city of Panama (destroyed in 1670), some three miles distant, form the link between the past and the present, though this charming vicinity has the unenviable reputation of being one of the worst plague spots in the world. J. S. Gilbert, a local poet, in his 'Panama Patchwork,' after recounting the deeds of—

'The Drakes, the Gilberts, the Granvils, and Leighs,
The Oxenhams, Raleighs—the props and the stays
Of England's first greatness—were the heroes of old
Who helped Britain's Queen with the old Spanish King's gold'—

touches upon the fall of old Panama as follows:—

'Alas, that such deeds should grow dim with the years,
Alas, that such men should have trained buccaneers;
That from such examples, so noble, so true,
A race of marauders and ruffians grew.
That fiends, such as Morgan, should follow the wake
Of men like John Oxman and Sir Francis Drake,
Who swore by the oak, by the ash and the thorn,
God helping them, always to sail round the Horn
To fair Panama and the placid South Sea
Which they saw one day from the top of the tree,
For old England's glory their standard to raise,
To cruise the Pacific and its isle-dotted bays.
Four miles from where Ancon looks down on the new,
Stood Old Panama, whence Pizarro once drew
The bravest of followers Peru to obtain,
And her Incas subject to the power of Spain;

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Where once stood cathedrals and palaces fair,
Whose altars and vessels and tapestries rare
Were the pride of a people whose opulence then
Was the envy of kings and the longing of men ;
Where once stately streets to the plains stretched away,
And warehouses skirted the vessel-laden bay ;
Where plantations and gardens and flowering trees
Once perfumed the tropical evening breeze,
Stands naught but a ruin half hidden from view—
A pirate's foul gift to his bloodthirsty crew.'

We landed at the Panama Railroad Company's new wharf at La Boca, which is close to the entrance of what it is expected in the next decade will be the Panama Canal. The Boca pier has about 1,000 feet channel frontage, and six large cranes capable of lifting 3,000 lbs. each. At the end of the pier there is a 25-tons crane, and the mean depth of water alongside is about 25 feet. The railway, which runs to Colon on the Atlantic side, travels to the end of the pier, and the facilities for handling cargo are good, though the rolling stock did not impress us as being of the newest kind. The railway is 47 miles in length, and it takes from 2 to 3 hours to perform the journey between the oceans. The cost of the railway and equipment, etc., the stock of which is principally held in France by the Canal interest, amounted at the end of 1902 to about £2,397,000, and there is an obligation to pay the Colombian Government £50,000 per annum. The work of construction through this unhealthy and mountainous district was extremely difficult, and it is said that every sleeper on the railway represents a man's life. We were not able

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to make the journey across the Isthmus during our brief stay in Panama, and possibly it was just as well, as the country was in a very disturbed condition owing to the revolution then in progress. From La Boca we drove to Panama, the road running mostly through palm and mango woods, and altogether a most beautiful and fertile country, though the numerous cemeteries, crowded with monuments, which we passed on the way did not tend to raise our spirits. A curious custom of the district is that an annual rental for each body has to be paid in respect of the occupation of the cemetery, and if the payment be allowed to lapse, the remains are thrown into one common receptacle.

There is a very mixed community of white, black, brown, and yellow nationalities in Panama, and each section has its own cemetery. The population is about 30,000. The black element, near La Boca, was very much in evidence, and their shanties looked picturesque, each with its turbaned female occupants standing at the door watching the gambols of their numerous progeny. They do not spend much on clothing, the turban being the chief item. The children were stark naked.

The streets of Panama are narrow, and except in the best quarter, the houses, though always interesting, appeared to be of the dirty tumble-down variety. There is, however, a fine square and gardens, as also a Cathedral and some good public and modern buildings. The soldiers were all drawn up in the square when we arrived, and they made a very brave show, going through sundry manœuvres in smart

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style to the tune of a martial composition in which the big drum took the prominent part.

Panama, as a distributing point for South, Central, and North America, is a busy port. There is a fair amount of local trade with the adjacent ports and the interior, and through cargo is brought from Europe and New York for ports on the North and South Pacific.

The regular lines of steamers serving Colon from Europe are :—

The Royal Mail Steam Packet Company,
The Harrison Line,
The Leyland Line (West India and Pacific branch),
Compagnie Générale Transatlantique,
Hamburg-American Line,
La Veloce Navigazione Italiana,
Fratelli Cosulich Line,
Compañia Trasatlantica de Barcelona ;

whilst from New York, the connection is made by the steamers of the Panama Railroad S.S. Line.

The quantity of through cargo outwards from New York and Europe amounts to about 120,000 tons per annum, and from the Pacific 135,000 tons.

In addition to La Boca pier, there are three other wharves, known as the 'English,' 'American,' and 'Market' respectively. These are only used for working cargo in and out of launches, small schooners, etc. Spring tides rise 20 feet, neap tides 16 to 17 feet.

The imports of the Department of Panama consist of provisions, cotton, woolen and silk goods, hardware, earthenware, clothing, boots and shoes, coal,

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wines, spirits, beer, medicines, etc., and may be valued roundly at £670,000 per annum. The exports consist of bananas, indiarubber, coffee, live stock, shells, ivory nuts, mahogany, hides, sarsaparilla, cokernuts, birds, etc., and are of the value of about £215,000 per annum. There is a good supply of launches in the port, belonging to The Pacific Steam Navigation Company, the Pacific Mail Steam Ship Company, and the Panama Railroad Company. These companies have also steam tugs, and the usual charge made for a towage of about five miles is $25 American gold.

Naturally, at Panama and in the district, we heard a great deal about the proposed Isthmian Ship Canal. The subject has been one of converse for the last 400 years, but no definite work was done at Panama until 1881, when a commencement was made with French capital. The length was to be 46⅓ miles, the width 124 feet at the water line, 72 feet at the bottom, and the depth 28 feet. The difficulties, however, proved to be enormous, and work ceased in March, 1889, after forty-eight and a half million cubic feet of earth and rock had been removed, and a sum of £48,000,000 had been spent. It is stated that King Charles V., of Spain, was thoroughly interested in the project of a waterway across the Isthmus, and that, in 1520, he directed a survey to be made for a ship canal. In 1534 the country between the Chagres and the Pacific was examined under Royal Decree, but the report was not favourable to the undertaking.

The canal works have had an important influence

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upon Panama, and there is no doubt that when the waterway is completed, the city and the surrounding districts will derive an immense benefit.

Quite a number of alternative routes have been proposed, but the Isthmus Canal Commission appointed by the United States Government in 1899 reduced these to two, either of which they considered feasible and practicable, viz., the Panama and Nicaraguan suggested routes.

Meanwhile a new Panama Canal Company was formed, and took possession of the property of the old de Lesseps Company, which had gone into liquidation. The new company has now disposed of its rights to the United States Government, and subject to satisfactory arrangements with the Colombian Government, the work will soon take active shape, and will, according to the estimate of the Commissioners, be completed within ten years. It was settled in Washington last year that the route should be by way of Panama, but there was and still is considerable agitation in favour of Nicaragua. The recent seismic disturbances, however, in that locality have tended to confirm the decision for Panama. There was an idea prevalent many years ago that the sea found its way by a subterranean passage from the Gulf of Mexico to the Pacific Ocean, and that the ravages of the water had much to do with the volcanic disturbances so frequent along the whole Central American coast.

The dimensions of the Canal will require very careful consideration if it is to meet the rapid development in the size of ocean-going steamers, and the dues

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for its use will need to be much less than is commensurate with the initial cost of the undertaking. There is no doubt that the greatest advantage will accrue to the United States by bringing its east and west coasts into more intimate connection by cheap transit, and by opening a short sea route from Europe for the development of the western coast. The Canal is, therefore, of great national importance to the United States, which should bear a large proportion of the cost without looking to the traffic for re-imbursement. It is difficult to imagine the effect which it will have upon the Pacific trade in general, but there can scarcely be two opinions as to its being beneficial to all the South and Central American Republics, as well as to the United States and Canada. A new route will be opened out to the East, and will tend to that great development of the countries bordering on the Pacific, to which more particular reference is made in Chapter XVIII. Steamers will ply all round South America, and the good old 'sailer' will no longer pass through the Golden Gate of San Francisco, nor touch at Vancouver, the future centre, let us hope, of the world's commerce.

It was my intention to bring this book to an end with the description of Panama, but as the visit which I subsequently made to the Chiriqui ports in the vicinity of Panama will make it more complete, I must ask the reader to accompany me that far. He may then journey home via San Francisco, or via the Isthmus, as he prefers. My journey was via 'Frisco, but as the incidents occurring in it and during my

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several trips across the great North American continent, and through Canada to Vancouver, would fill another volume, I fear that, having regard to my very limited leisure hours, they must remain for ever simply as a pleasant memory, unless the welcome accorded to this book by an indulgent public interested in 'Trade and Travel,' is such as to establish the hope that a further effort of the kind would be appreciated.

But now we are prosing, when a yarn would probably be more beneficial both to the reader and writer, and as yarns are best told aboard ship, we will take a boat and pull over the shallows to the small tug outside, which will carry us alongside the steamer 'Taboga' at anchor near the island of Flamenco. The Bay of Panama is always beautiful—it reminded me very much of the harbour of Rio de Janeiro, and at night time, illumined by the innumerable lights of the town, it forms a romantic scene. The moon burst forth as we glided past the end of the pier, and turned the bay into a world of enchantment. The silvern sea, the boats flitting here and there, the city standing out against Mount Ancon in exquisite mystery, and the shadows of the marginal buildings, now awful in their intensity, now broken by the sheen of the moonlight as it tremblingly touched the crest of the swelling waters and left them to sink back again into deeper darkness, gave us some idea of the feeling which Balboa must have experienced when he made his 'magnificent vaunt' and claimed the whole for his king and country. Nevertheless, we were pleased to get on board the 'Taboga,' as it is safer for strangers to avoid sleeping

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on shore at Panama, and we said good-bye to the city with the feeling that with all its beauty, we would experience a sense of relief when we weighed anchor and sailed for Chiriqui. Gilbert says :—

'Tis the land where all the insects breed
That live by bite and sting ;
Where the birds are quite winged rainbows bright,
Though seldom one doth sing.
Here radiant flowers and orchids thrive
And bloom perennially
All beauteous, yes—but odourless
In the land of the cocoanut tree.'

When we arrived on board, the captain seemed very much amused, and, on enquiring the cause, he told us that one of the quartermasters had been on shore to buy some 'slops' at one of the many 'bodegas' in the Jewish quarter of Panama where sailors' attire is sold. When he got on board he opened his parcel, and, to his great annoyance, found the clothes were literally alive with moths and other 'bichos,' so he got permission to take them back. The dealer, however, would not receive them, but consoled him by saying 'Ach, vell, vat did you expect für zee monish! Humming birds?'

The insects remained with us during the trip up the rivers and 'esteros' of the Chiriqui district, and we would have given something (metaphorically speaking) to drown both the Jew and the sailor before the voyage was completed. This reminds us of what Gilbert says on this subject, and which fitted our case exactly :—

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'Itch, itch, itch,
While the months a whirling go;
Itch, itch, itch,
As the years to decades grow;
Oh God, for a moment's rest,
Or, if I can't be granted that,
In one spot quench the teasing flame,
Or blot that spot from my tortured frame—
The spot that I can't get at.'

Our first port of call after leaving Panama was Agua Dulce, and the entrance to the river of that name is very difficult to determine. Once made, however, it is very pleasant sailing up to the anchorage—about seven miles from the mouth. The town is an hour's ride from the landing-place, and the country is charming to look at, but very swampy. We got a

LANDING-PLACE, SONA.

little shooting at pelicans and herons, of which latter bird we saw three kinds—white, blue and green. The

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river banks are beautifully wooded, and there are numbers of green parrots in the trees, as well as other brilliantly-plumaged birds. We saw something of the effects of the revolution, as a marauding party was at Agua Dulce commandeering the cattle. These gentlemen invariably give a receipt for what they take, and the fortunes of war are supposed to decide the question of loss or reimbursement.

The more we saw of the Gulf of Panama, as we proceeded from port to port, the more we liked it, notwithstanding that we experienced a fairly heavy gale on it. All the islands—and there must be about 1,000 in the Gulf—looked splendid, covered from beach to summit in tropical foliage. We intended to make Port Mutis, but the water in the Remolinas river being too low on our arrival for the ship to enter, we came to an anchor off the Island of Leone, and went ashore to see the native village, taking guns with us as a precaution. Whether it was the sight of the guns or not which frightened the natives, we could not determine, but the village was practically empty, a few women and children only being left in it, the men having all disappeared. We visited several of the huts, and had a look at such of the inhabitants as were left. These live in the most primitive state imaginable. The huts are all built on piles on account of the malaria which rises from the ground, and the cobras and vermin. In the daytime the square under each hut is used as a living apartment, the cooking being done in one corner, and the rest of the space occupied by the family, including the fowls and pigs.

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The people live on bananas, plantains, maize, rice, and what fish, flesh and fowl they can get. The children were running about naked, and the women wore coloured rags of one kind or another, with charms about their necks, and their hair hanging down behind in two long plaits. The bodice they wear is of the 'one arm in and the other out' kind, and, despite their poor attire and worse surroundings, some of the women, with their dark, dreamy eyes, bluish black hair, dark skin and red coral ornaments, looked pretty and gipsy-like. After purchasing some small articles, and refreshing ourselves with cokernut milk, we returned to the ship. By this time the water had risen, and we started up the Remolinas river for the 'port,' about 24 miles inland. The run up was most enjoyable. The river banks are covered with manglare or mangrove trees, and there were plenty of wild birds about. Numbers of parrots continually flew over the ship, always in couples, and always chattering away as if they were discussing the object of our visit, and disputing the right of way. Port Mutis is simply a 'corral' in a field, with one or two huts in which business is done. The town—Santiago de Veraguas—is a little way inland. We remained for a very short time at Mutis, and did not go ashore. Turning the ship round by making the bow fast to a tree, which will give some idea of the navigation, we steamed away for Sona, on the river of that name. We could hear the monkeys chattering in the timber, but they carefully kept out of sight. There were numbers of

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alligators in the river, and we got plenty of shooting. Sona port consisted of a few primitive huts, corrals for cattle, and a wooden mole. The town is six leagues

S.S. 'TABOGA' AT SONA PORT.

away, through a pretty rough country. Horses having been brought to the port, I determined, with certain of the other passengers, to take advantage of the opportunity thus afforded of inspecting the town, little knowing what I should suffer in consequence. We started soon after eight o'clock in the morning, and were cantering pleasantly through the woods, there being no proper road, when one of the party was caught by the branch of a tree. He lost his hat through this, and dismounting to recover it, lost his horse. This caused a diversion, and some time was spent in recovering the runaway. Then off we went again, up hills, down quebradas, across brooks and streams, now cantering

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and then galloping as fast as the horses could go when the ground was suitable. The most beautiful vegetation surrounded us, though everything was virgin. We

START FOR SONA TOWN.

followed the bullock track as nearly as we could, and this led to a narrow rocky gorge, through which we could only ride in single file. There was barely room for the horse, and we had to be careful to prevent our feet from being crushed against the rocks. The country opened out at the end of the gorge and we got away at a gallop, the horses being urged on by whip and spur. The heat of the sun was terrible, and the ride most exhausting. I could scarcely see, being blinded by perspiration, and the saddle would persist in hardening

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to a degree quite unbearable. Coming to a deep, clear stream, we refreshed ourselves and the horses. Then off we went again over some very rough country, until we came to a sugar plantation. The owner of this being one of our party, invited us to inspect it, and we gladly accepted. The machinery was of a very primitive character, and was used for making molasses and rum only. As we had still four miles to ride, and the heat was increasing, we curtailed our stay with the planter, and resumed our journey. The remainder of this was very much like what had preceded, and, after fording one more stream, which was so deep that we had to lie along our horses to keep out of the water, we entered the town. It was the most curious place I had ever seen. The huts at first were of the native kind, very much like what we saw at Leone, though they improved somewhat as we got into the town. There is a church and a grass-grown plaza, and some of the houses are no doubt comfortable inside. Cock fighting is evidently the favourite pastime, as a fighting cock was fastened by a light chain to almost every street door. We rested for a time at Sona, and as we felt quite unequal to riding back to the port, we got a couple of Indians and a 'dug-out' to take us down by the river. It was all right at first, but the cramped-up position became very painful, and we would have preferred to stand, but the 'dug-out' was too frail and shallow to allow of any movement, and the water was full of alligators ready to snap us up if we fell in. We had a long journey before us, and the Sun was just disappearing. Then it went down, and

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all was dark. Fortunately the Indians knew their business, as we might readily have taken the wrong turning, there being numerous 'esteros' leading off the main river. As our eyes became accustomed to the starlight, we could just distinguish objects as we passed along, and now and again the Indian in the prow would call out '*Aligador mas grande que la canoa*,' (alligator larger than the canoe). The splash of the paddle, however, sufficed to keep the reptiles away. Nightjars and insects of all kinds now set up a noise which filled the air with a resonant whirl, and the banks were picked out by a perfect array of fireflies. We ran into one or two floating islands, but got off without accident, and if we had had a gun (though night shooting is possibly prohibited), we might have had splendid sport with the hawks and other birds and alligators which we were constantly disturbing. Close upon eight P.M. we came in sight of the steamer's lights, and we signalled in the most approved antediluvian fashion. The steamer responded, and all on board were glad to see us back again in safety. The 'Taboga' having finished her work, proceeded to Remedios. The port is about 35 miles up river, and the scenery on the way is splendid. Our stay was extremely short, there being little business to transact. Thence we steamed for Pedregal, where a fair quantity of cargo had to be discharged, and, as we arrived early in the morning, we were able to get some very good shooting. Taking a boat, we passed slowly up one of the neighbouring esteros, and were soon busy amongst the razas or egrets (blue and white), coca birds

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(excellent eating), kingfishers and iguanas. There were humming birds, radiantly plumaged, flitting about everywhere, and the parrots kept up a constant chatter,

PEDREGAL.

whilst at times the screaming of the gaily-coloured macaws seemed to disturb the entire neighbourhood. After securing many trophies, we returned for breakfast, and then went by coach to the city of David, a few miles distant. David has about 8,000 inhabitants; and the drive there was hot and uninteresting. The city itself had nothing attractive in it, and after a chat with some of the inhabitants, we returned to the ship. As our next and final port of call in the 'Taboga' was at Punta Arenas, in Costa Rica, where we disembarked

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to join the through steamer for San Francisco, we must stop our narrative at this point, merely adding

STREET IN DAVID.

that the business done with the small ports in the

PUNTA ARENAS (COSTA RICA).

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Chiriqui district is in passengers, cattle and dry goods. The trip, however, is an ideal one for a holiday, and anyone passing through Panama, who can spare the time to make it, say ten days, should certainly do so, and should take a good gun and plenty of ammunition, as there are splendid opportunities for sport.

PUNTA ARENAS (COSTA RICA).

I cannot close this work without thanking my travelling companions, and the numerous kind friends at home and abroad who have either helped me in the direction of my special mission, or in any way contributed to my comfort or pleasure, regretting that it is impossible to thank each individually without the risk of omitting some one of the many to whom

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I shall ever feel indebted, and to whom I venture in grateful remembrance to dedicate this work on Trade and Travel in South America.

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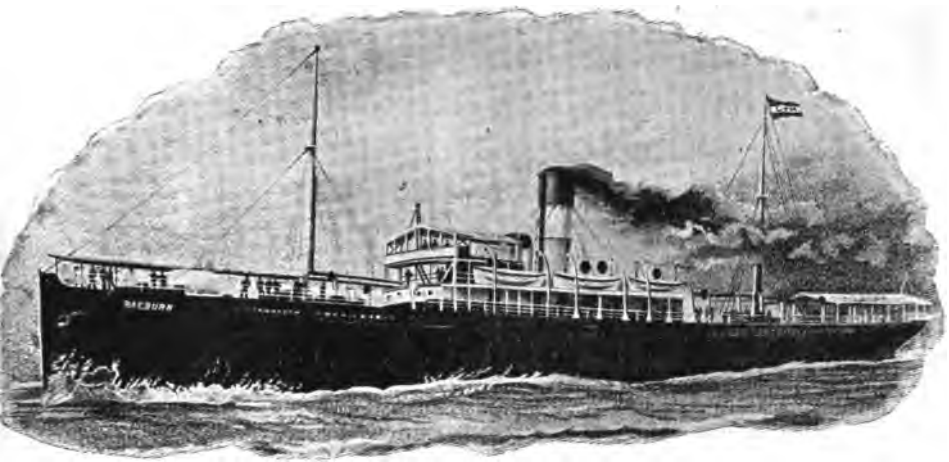

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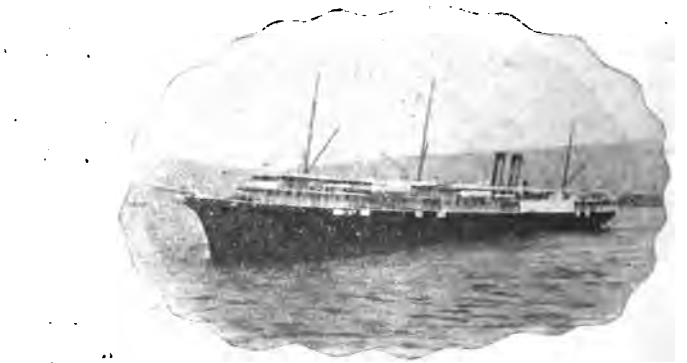

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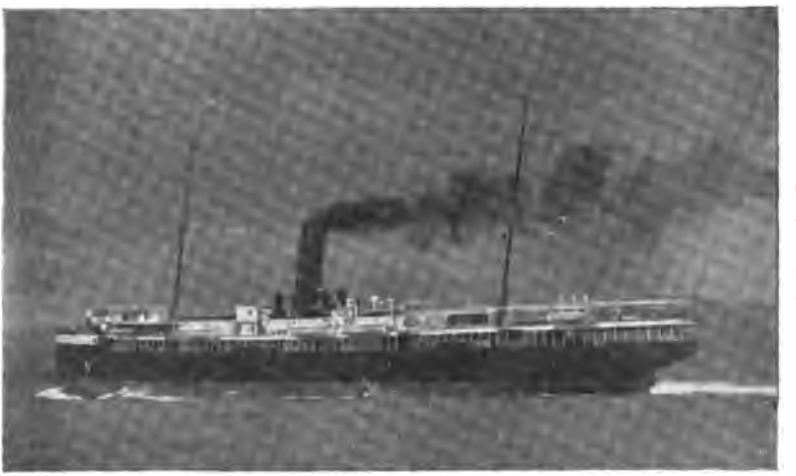

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